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  Presentation Manager Debuts
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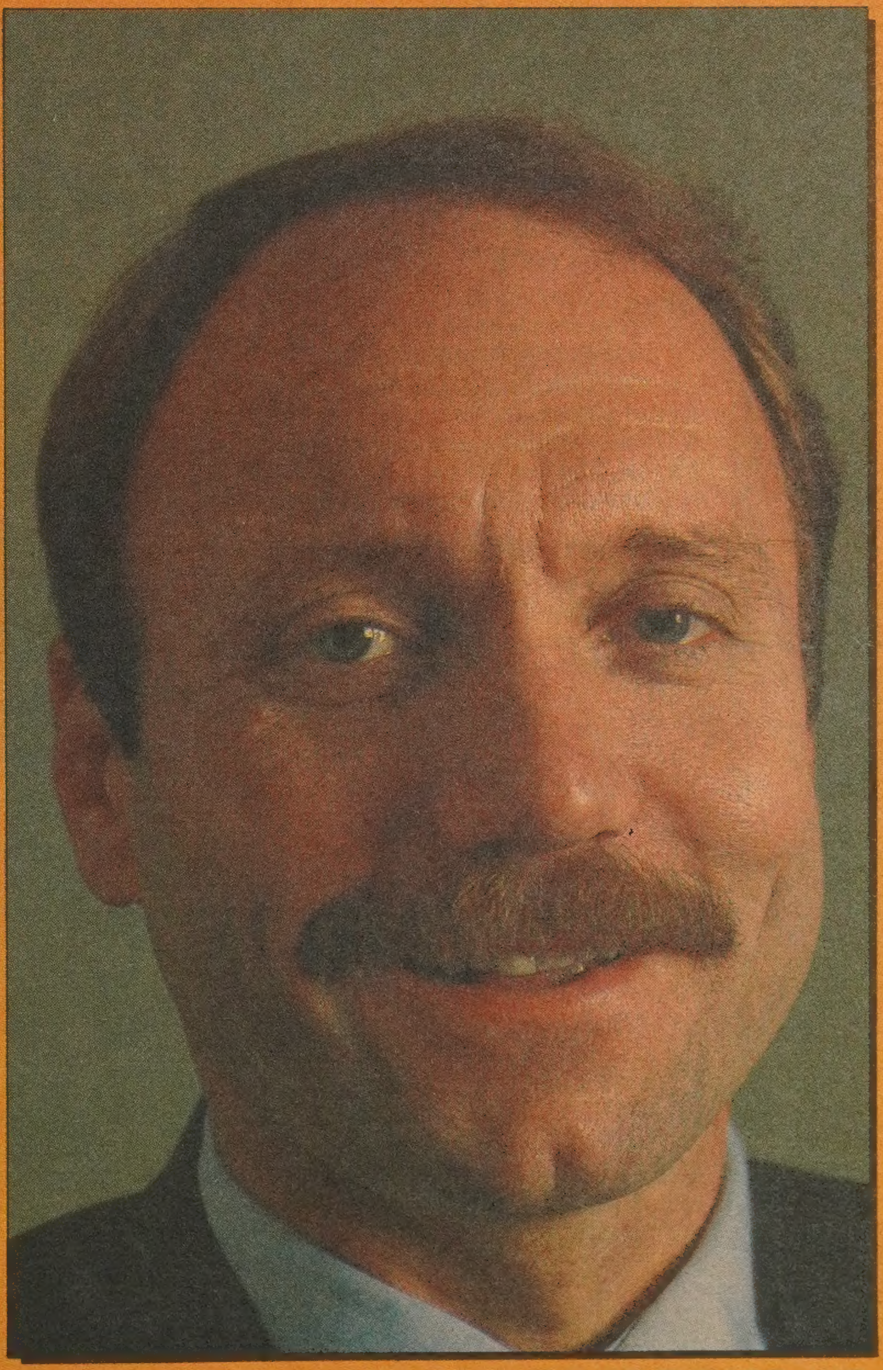
- **Cordata WPC**
  Affordable, Useful PC Compatibility

A DOS User Asks: Should You Buy A Mac To Get HyperCard?



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& MONITERM

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Let's cut through the hype and misinformation about large-screen monitors for desktop publishing. We've put together a set of tough questions to ask your dealer. Here are a few of them:

How fast can it update the screen?

Moving text or graphics around on a large-screen monitor means updating one million or more pixels. That can take forever on some monitors. Insist on a high-speed, built-in graphics coprocessor, like the Viking 1 controller board. Speed equals productivity!

What's it compatible with?

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How big is the screen?

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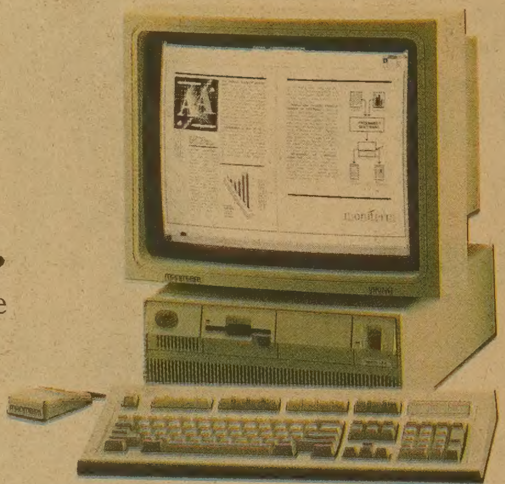

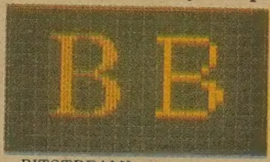

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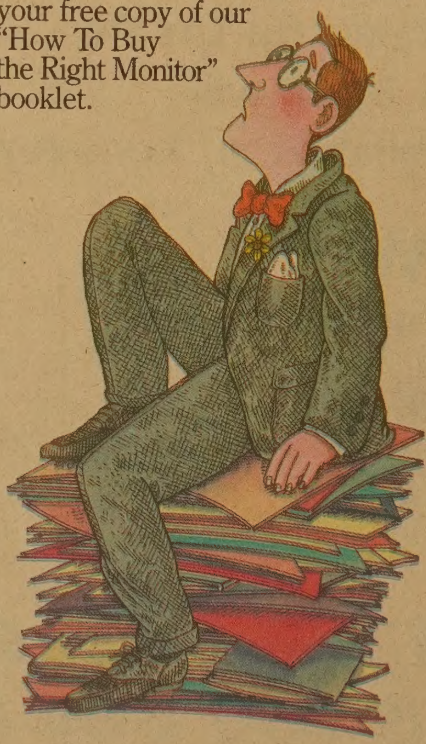

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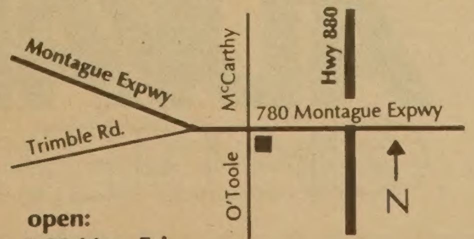

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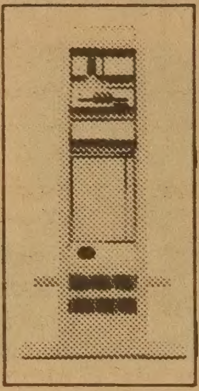

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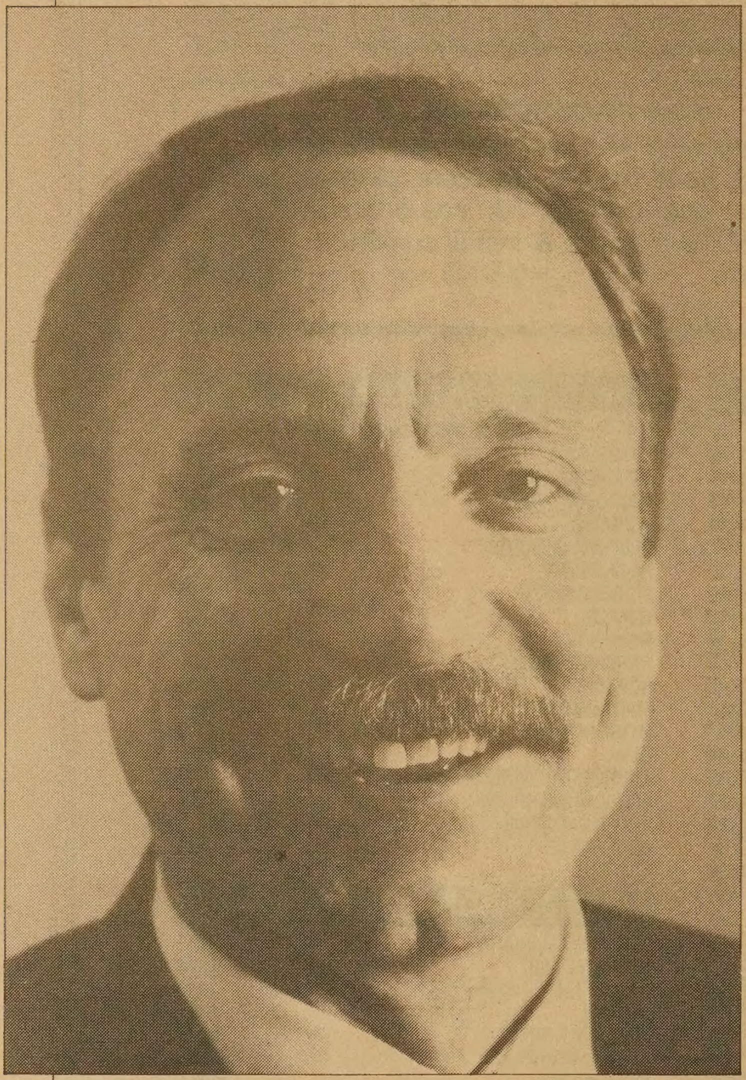

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46

Sybase: Connectivity Solutions In Data Base Management

By Mary Eisenhart

Developers of elegant and powerful DBM software for the Fortune 500, this Berkeley-based company is part of the connectivity strategies of Apple, Ashton-Tate and Microsoft. In this interview, Sybase president and co-founder Mark Hoffman explains its products and strategies.

Mark Hoffman, president of Sybase, talks about data base management and connectivity.

DEPARTMENTS

10 But Jan Lewis Says...
Media, hyper- and otherwise, and what they do.

14 Calendar Of Events

23 News And Analysis
By Paul Hoffman

116 Buyers Guide

118 User Group Network

148 Classifieds

152 Index Of Advertisers

154 Dvorak's Last Column
By John C. Dvorak
The Macworld Expo, or why you should stick to user groups.

COLUMNS

96 Macintosh-PC Connectivity
By Robert Beauchamp
This new column debuts with an introduction to the TOPS network, linking a Mac Plus and an AT.

100 Telecommunications
By Brock N. Meeks
Fond of the First Amendment? The Office of Technology Assessment has a surprise for you.

104 UNIX
By Bennett Falk
Amazing timekeeping secrets, how Pope Gregory affected UNIX, and other matters.

106 Amiga Column
By Matthew Leeds
The AmiExpo in Los Angeles.

108 Atari ST
By Helmi Kobler
Great games and Atari's new laser printer.

112 Apple II
By Mike Markowitz
A veteran user addresses the perennial question: Is the Apple II doomed?.

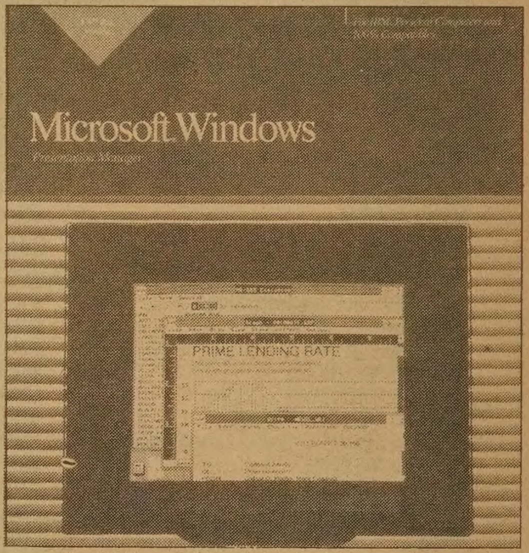
114 CP/M
By Robert D. Athey Jr.
The ON! computer, better than ever.

FEATURES

38 A DOS User Asks: Should You Buy A Macintosh To Get HyperCard?
By Birrell Walsh
The author is in favor of the notion.

90 MIDI And The Macintosh
By Paul Craner
The sequencer.

HANDS ON



Using Windows 2.03, DOS users don't have to wait for OS/2 to check out the Presentation Manager.

54 Microsoft Windows 2.03
By Robert Beauchamp
Now you don't have to wait for OS/2 to get the Presentation Manager.

58 PageMaker 1.0a For The PC
By David Garfinkel
The Aldus bestseller from the Mac world meets the document needs of the PC office.

62 The Abaton 300 Series Scanners
By Lenny Bailes
300-dpi graphics in a variety of file formats.

66 GeoPublish
By Sue Albert
The impossible dream of desktop publishing on a Commodore 64 is now reality.

70 TurboTax
By Birrell Walsh
If you do your own taxes, this program can save you pain, suffering, and money.

74 SeeMORE
By Woody Liswood
Gives you the big picture for 1-2-3 spreadsheets.

84 The Fujitsu FPG-310 Plotter
By Woody Liswood
High quality and resolution, low price.

86 The Cordata WPC CS40
By David Batterson
Good features and performance, affordable price on this PC compatible.

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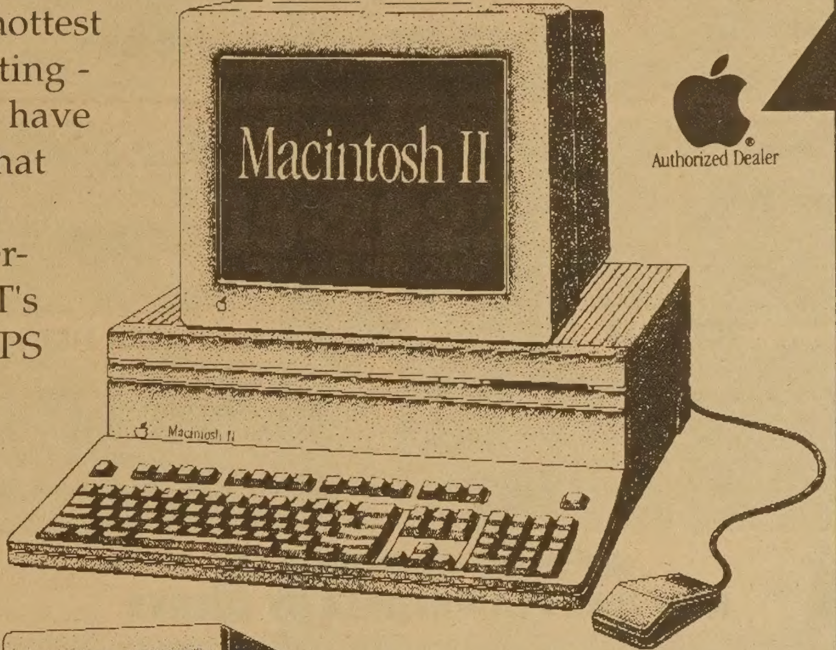

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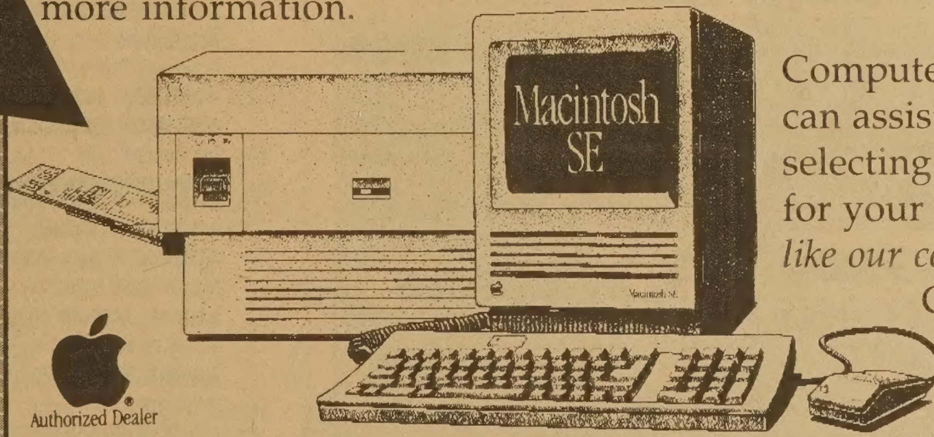

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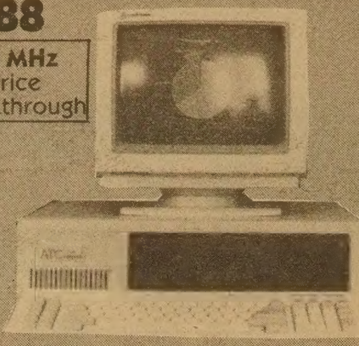

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BUT JAN LEWIS SAYS . . .

Understanding Media, Hyper- And Otherwise

By Jan Lewis

In the first part of this series, I analyzed the evolution of communication by categorizing seven key technologies that gave our species new means of communicating experience and knowledge. Each of these media democratized information by making it more accessible to more people. In this part of the series, we'll examine each of the seven media and explore how each altered the dynamics of communications. Our aim here is to understand the past in order to better predict and prepare for the future.

The seven key media that we outlined last time are pictureforms, speech, letterforms, printing press, electronic information, imageforms and hypermedia.

The first three were fully developed before my time. The latter four are still evolving. In this column, we'll examine how each of these are changing the dynamics of creating and accessing information.

Let's lay the groundwork with explanation of some basic concepts.

Distribution And Ease Of Access

Democratizing information simply means extending access to more people. There are two ways to do this: by extending the physical or logical distribution of information, and by improving the usability of the information once it has been distributed. All seven significant media alter distribution and/or ease of access. (Distribution and other factors of either omission or commission affect ease of access. If information is hard to access for any reason, it is a de-democratizing factor.)

Most media we encounter will be a combination of more than one of these media. Television, for instance, is imageform, but it is broadcast electronically. A drawing of a widget is a pictureform, but it may be sent over a fax machine electronically. Computer based icons are pictureforms stored in digitized electronic format.

Abstraction Of Experience And Knowledge

Pictureforms include any pictorial or iconic representation of information. A cave drawing is an example of a pictureform. So is the Mona Lisa. Today we look at cave drawing as primitive and ineffective. At the time, though, the experience was revelation, miracle, nightmare — more vivid than *Night Of The Living Dead.*

Letterforms are a level of abstraction beyond pictureforms. All forms of writing and alphabets fall into this category. With fewer symbols (26 in our alphabet, for instance) you can represent an almost infinite amount of information. Letterforms are intrinsically meaningless, taking on meaning by common convention rather than common experience.

Speech or storytelling, while it has more temporal limitations than letterforms or pictureforms, incorporates more sensory stimuli. Gestures, facial expressions, tone of voice, sound all enrich the experience in the imagination of the audience. The development of speech was also a civilizing influence. Speech first allowed individuals to relate and pass on history, celebrations, laws, etc. across geography and time to anyone who knew its ritual.

Mass Production

Like letterforms and pictureforms, storytelling has limitations. Letterforms, pictureforms and speech may have been effective methods of communication, but without any way to store and mass-produce them, its audience, or user base, remained limited.

While pictureforms and letterforms are a representation of of reality, imageforms are perceived as reality. There is something much more credible and more involving about imageforms that any other media.

The printing press brought a quantum leap to communication. It was the first technology that allowed for mass-produced information. A picture on a cave wall could exist once. More than one person could experience it, but it only had one existence.

You couldn't photocopy a picture of a battle portrayed on the wall of a cave and distribute copies. The same with speech. You could relate a story orally, for instance, and many people at a time could listen to it. But it still only had one occurrence. You had to be there. The printing press, on the other hand, allowed the physical creation of more than one occurrence of a story, i.e. mass production.

Trivial Duplication

Then came electronic representation and distribution of information. This one really made a difference. For the first time, information could be not only mass-produced, but duplication was trivial.

To illustrate this, consider publishing an essay in a newspaper. The newspaper expands your reach since many copies can be distributed. Nevertheless, some marginal amount of resources is required for every paper produced. For each additional paper, something material has to come off of a production line, get put into a truck, and get delivered to a newsstand or a user. Paper and ink are consumed, as is space on the truck and at the newsstand.

In the process of mass production, it's possible (and in fact, common) to count the number of copies in existence. Contrast this with putting that same essay onto the electronic networks.

Infinite copies could be spun off with no cost or effort whatsoever on the part of the creator. And with enough gateways or a large enough network, that essay could blanket the world within seconds.

Surrogate Experience

Imageforms — film, video, audiotape, photographs, etc. — impact on the experience of the audience in a

---

Jan Lewis is a well-known industry analyst and president of the Palo Alto Research Group, a consulting firm for the microcomputer industry. This article has been reprinted with permission from Computer Insider, *PARG's newsletter.*

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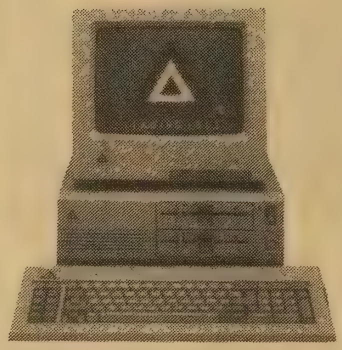

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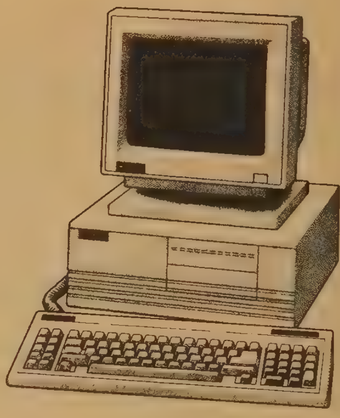

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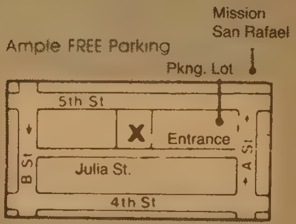

> Access to massive databases on compact disks or through phone lines is changing the economics of information delivery, but hypermedia will change how effectively we use it.

more vivid fashion. While pictureforms and letterforms are a representation of of reality, imageforms are perceived as reality. There is something much more credible and more involving about imageforms that any other media.

Imageforms increase distribution of storytelling the way movable type increases the distribution of letterforms — by being mass produceable. Take video, for example. Videotapes have similar distribution economics as books. You might say that video is to storytelling what movable type is to writing.

The first imageform developed was photography. This medium captured only visual data. The early implementations of film also captured only visual data. Later, imageforms would evolve to include sound and time.

Until photography, any reproduction of sensory experience was the reproduction of a representation of that experience — either an iconic or a language-based representation. With photography you could not only reproduce the representations of sensory experience, but could reproduce the appearance of experience itself. This is the essence of imageforms: "surrogate" experience.

To illustrate this difference, let's say there is a fire in a village. In the early days of human communication, that story could be communicated by a person going to the next town and relating that story, or by representation of the story using drawings or letterforms. With imageforms, the story of a fire in a town could actually be communicated by bringing cameras and microphones to the scene and reproducing the actual visual and audial experience itself.

Imageforms can be mass-produced, like videotapes or compact disks. Or by using broadcast technology, they can be trivially duplicated.

Thoughtforms

The previous six media democratize information primarily by increasing distribution, but none really provide improvement in the ability to use the information. Hypermedia, on the other hand, do. Access to massive databases on compact disks or through phone lines is changing the economics of information delivery, but hypermedia will change how effectively we use it.

Hypermedia deal with the topology of information. Think of a "storyline" in any of the previously mentioned media, but with accommodation made for every conceivable tangent. Impossible, you say. Every possible tangent that could arise when reading every article in *Time* magazine would be impossible to print and unusable if they tried. Yet even with *Time*, there is some attempt at accommodating the way we think by providing a table of contents, which lets the reader do some level of shaping the "information space" contained in its pages.

The universe is an information space. Every other body of knowledge is a subset. But in all cases, information is multi-dimensional. Real information goes off in every tangent possible at every place possible. Through the use of one or more of the seven key media, we communicate pieces of that information space as knowledge. When we relate knowledge, we must retrofit our multidimensional knowledge space into a flat linear package. A book, a videotape, a speech, a television show — each requires that both the creator and the consumer change their associative thinking patterns to fit the limitations of the media.

In contrast, hypermedia allow the user to shape the media to fit his way of thinking, rather than vice versa. Human thinking is multidimensional. Since hypermedia accommodate "tangents," they eliminate linear media as a constraining factor. As a technology, the real challenge is data capture and storage, the tools to create a multidimensional information space, and the tools to easily navigate through it.

Just as imageforms communicate visual and audio data — sensory experience, hypermedia communicate mental processes and linkages — thinking experience. Since electronic media are starting to be able to carry immense amounts of information, it is necessary that it be accessible. Hypermedia provide the indices, the linkages, the associations, and the organization processes that allow users to follow their own logic, rather than be at the mercy of the librarian. Or of Big Brother. ☐

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HACKERS • 402/410/411/414/416: Back up commercial programs
MUSIC • 2401 • PC-MUSICIAN V1.7: Develop & play back songs on your PC.
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CALENDAR OF EVENTS

February 17 – 19 Software Development '88. Ramada Renaissance, San Francisco. Contact JoAnn Tingley, Conference Coordinator, Seminar Division, Miller Freeman Publications. (415) 995-2426. Fax: (415) 543-0256.

February 20 Santa Rosa Computer Show And Sale. Sonoma County Fairgrounds. Golden Gate Shows, (415) 388-8893.

February 20 Amiga Class: Business Applications. Contact Patrick Bailey at (415) 949-4864.

February 22 – 26 UNIX System Classes; Including Bourne Shell Programming And System V Administration. Holiday Inn, Palo Alto. Contact Berkeley Decision/Systems at (408) 458-0500 for more information.

February 24 Managing The Power Of Information: An Up-To-Date Look At Information Systems. Hyatt Regency, Oakland. Contact AIIM Conference, John Glover, (415) 550-1600.

February 25 – 26 Desktop Publishing Seminar. Concord, CA. Association For Systems Management, (212) 243-6900.

February 27 – 28 Computer Supermarket Show And Sale. San Mateo County Fairgrounds, San Mateo. Microshows (800) 433-7469.

February 29 – March 2 Simulation Performance Seminar. Meridien, San Francisco. Contact the Technology Transfer Institute at (213) 394-8305.

March 1 – 3 Third International Conference On CD-ROM. Seattle, Washington. Contact Microsoft, Sherrie Eastman, (206) 882-8080 extension 7213.

March 3 Power Communications Skills For Women. Stockton. Call (303) 447-2300 for more information.

March 4 Power Communications Skills For Women. Concord. Call (303) 447-2300 for more information.

March 5 Bay Area Computer Swap. San Francisco, Cow Palace. Microshows (800) 433-7469.

March 5 Santa Clara Computer Show And Sale. Santa Clara Convention Center. Golden Gate Shows, (415) 388-8893.

March 7 – 9 Small Computers In Libraries Conference and Exhibition (SCIL '88). Hyatt Regency Chicago, Illinois Center, Chicago, Illinois. Call (800) 635-5537 for more information.

March 7 – 11 Seybold Seminars '88: Frontiers In Electronic Publishing. Hyatt Regency Embarcadero, San Francisco. Contact Seybold Seminars, (213) 457-5850.

March 10 Desktop Publishing Service Center Review. Fort Mason, Bldg. A, San Francisco. Showpage (415) 621-8808.

March 10 Time Line Workshop. Know How, Inc. San Francisco. Contact Sherri Davis, Symantec-Breakthrough Software, (415) 898-1919.

March 10 – 12 Small Business Focus Trade Show. Santa Clara Convention Center. Sponsored by the U.S. Small Business Administration. Contact (415) 941-9773 ext. 100 for more information.

March 12 – 13 Computer Supermarket Show And Sale. Brooks Hall, San Francisco. Microshows (800) 433-7469.

March 12 – 13 Oakland Computer Show And Sale. Oakland Coliseum Golden Gate Shows, (415) 388-8893.

March 16 Power Communications Skills For Women. Oakland. Call (303) 447-2300 for more information.

March 17 Power Communications Skills For Women. Union City. Call (303) 447-2300 for more information.

March 17 – 18 The Western Educational Computing Workshops. Cerritos, College, Norwalk, California. Contact Judah Rosenwald, (415) 338-1212.

March 18 Power Communications Skills For Women. Oakland. Call (303) 447-2300 for more information.

March 20 – 23 68th ADAPSO Management Conference. Marriott Desert Springs, Palm Desert, California. Call (703) 522-5055 for more information.

March 21 Time Line Workshop. Know How, Inc. San Francisco. Contact Sherri Davis, Symantec-Breakthrough Software, (415) 898-1919.

March 21 – 23 National Database & 4th/5th Generation Language Symposium. Washington, D.C. Digital Consulting Inc., (617) 470-3880.

March 22 Seminar With James Levy, Founder And Former CEO Of Activision. Contact the Learning Access at (415) 922-9900.

March 26 Amiga Class: Music Applications. Contact Patrick Bailey at (415) 949-4864.

March 26 Computer Swap. Alameda County Fairgrounds, Pleasanton. Microshows (800) 433-7469.

March 26 Computer Swap. Santa Clara County Fairgrounds, San Jose. Computer Swap America. (415) 366-9162.

March 26 San Francisco Computer Show And Sale. Fort Mason Center. Golden Gate Shows, (415) 388-8893.

March 27-30 Software Publishers Association's Spring Symposium. Claremont Hotel, Berkeley. Contact the SPA at (202) 452-1600.

March 28-31 World Congress On Computing. Chicago, Illinois. Contact The Interface Group, (617) 449-6600, for more information.

April 2 Sacramento Computer Show. Cal Expo. Golden Gate Shows, (415) 388-8893.

April 7 Time Line Workshop. Know How, Inc. San Francisco. Contact Sherri Davis, Symantec-Breakthrough Software, (415) 898-1919.

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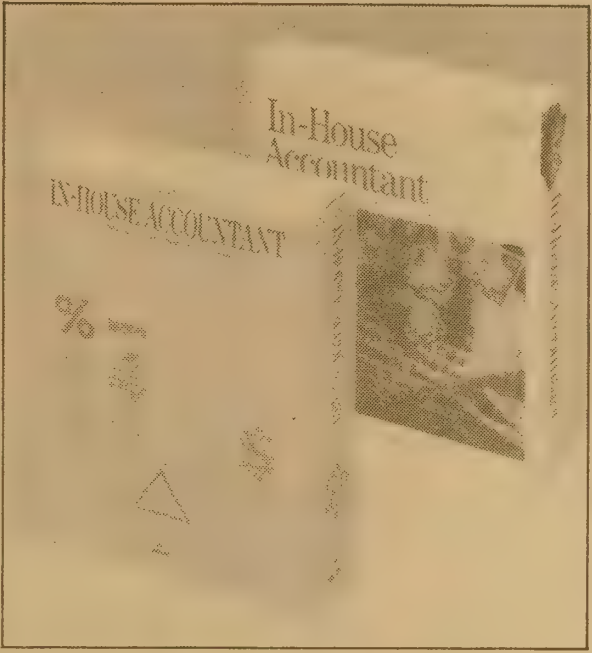

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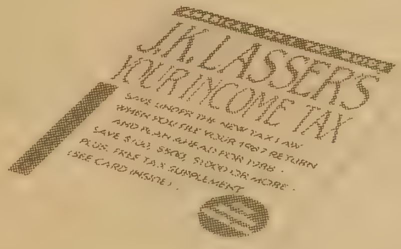

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April 7 – 10 13th Annual West Coast Computer Faire. San Francisco, Moscone Center. Contact The Interface Group, (617) 449-6600, for more information.

April 11 – 13 1988 Facsimile And Image Communications Conference. Marriott Copley Place, Boston, MA. CAP International, (617) 837-1341.

April 11 – 14 Adding Image To Information Management 1988 AIIM Show. McCormick Place, Chicago, Illinois. Association For Information And Image Management (301) 587-8202 or Dan Dowd Communications (415) 593-9899.

April 16 Computer Swap Meet. Santa Clara County Fairgrounds, San Jose. RK Productions. (800) 252-7927.

April 18 Time Line Workshop. Know How, Inc. San Francisco. Contact Sherri Davis, Symantec-Breakthrough Software, (415) 898-1919.

April 23 Computer Swap. Alameda County Fairgrounds, Pleasanton. Microshows (800) 433-7469.

April 23 Vallejo Computer Show And Sale. Solano County Fairgrounds. Golden Gate Shows, (415) 388-8893.

April 26 How To Automate Your Business Accounting System. Gateway Holiday Inn, San Francisco. Contact Beth Markus at J.C. Lukrich & Company CPA's, (415) 864-6770.

April 30 Marin Computer Show And Sale. San Rafael Civic Center. Golden Gate Shows, (415) 388-8893.

May 2 – 3 The Elusive Payoff In Information Technology: A Conference For Senior Executives. McGraw Hill World Headquarters, New York City. Call (212) 512-4402 for more information.

May 2 – 5 AutoCAD Expo '88. McCormick Place North, Chicago, Illinois. Contact Autodesk at (415) 332-2344 ext. 799.

May 14 Computer Swap. Alameda County Fairgrounds, Pleasanton. Microshows (800) 433-7469.

May 14 Santa Rosa Computer Show And Sale. Sonoma County Fairgrounds. Golden Gate Shows, (415) 388-8893.

May 14 – 15 Amiga-Commodore Show. Santa Clara Convention Center. Golden Gate Shows, (415) 388-8893.

May 16 – 18 National Database & 4th/5th Generation Language Symposium. Chicago, IL. Digital Consulting Inc., (617) 470-3880.

May 21 Computer Swap. Santa Clara County Fairgrounds, San Jose. Computer Swap America. (415) 366-9162.

OUT OF AREA EVENTS

February 23 Seminar: Computer Systems For Law Firms. Westin Bonaventure, Los Angeles, 6:30 p.m. – 9 p.m. Sponsored by Kenfil Distribution. Call (818) 785-1181 for information.

February 23 – 26 Adam Green's dBASE Seminars. Los Angeles. Contact Digital Consulting, Inc.,

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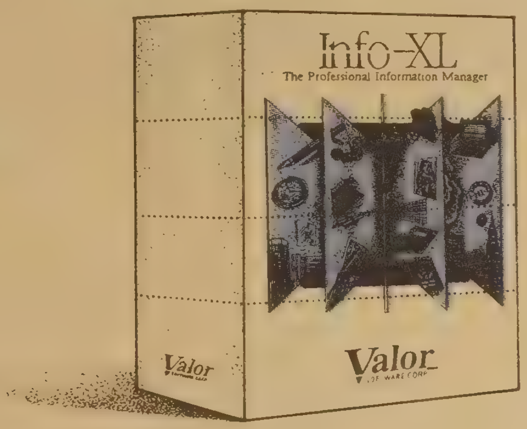

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February 27 Computer Swap Meet. Los Angeles County Fairgrounds, Pomona. Call RK Productions at (800) 252-7927 for information.

March 12 Computer Swap Meet. San Diego County Fairgrounds, Del Mar. Call RK Productions at (800)252-7927 for information.

March 12 San Fernando Valley Computer Swap. California State University, Northridge, North Campus. Contact Microshows (800) 433-7469.

March 14 – 16 OSI & ISDN Seminar. Technology Transfer Institute, Santa Monica. Call (213) 394-8305 for more information.

March 14 – 17 Queueing Systems Seminar. Technology Transfer Institute, Santa Monica. Call (213) 394-8305 for more information.

March 19 Computer Swap Meet. Los Angeles County Fairgrounds, Pomona. Call RK Productions at (800) 252-7927 for information.

March 28 – 31 Interface '88. McCormick Place, Chicago, IL. Contact The Interface Group, 300 First Ave., Needham, MA 02194. (617) 449-6600.

April 2 Computer Swap Meet. Orange County Fairgrounds, Costa Mesa. Call RK Productions at (800)252-7927 for information.

April 2 San Diego Computer Show. Scottish Rite Center. Contact Golden Gate Shows (415) 388-8893.

May 9 – 12 COMDEX. World Congress Center, Atlanta, GA. Contact The Interface Group, 300 First Ave., Needham, MA 02194. (617) 449-6600.

May 31 – June 3 National Computer Exposition/Conference. Los Angeles Convention Center. Contact NCE/NCC '88, Suite 500, Chicago, IL. (312) 222-0198.

June 1 – 3 Independent Computer Consultants Association National Conference. Stouffer's Inn on the Square, Cleveland, Ohio. Call 1-800-GET-ICCA for more information.

June 7 – 9 Distributed Data Base Systems. Computer Science Short Course. UCLA Extension (213) 825-1047.

June 15 – 17 MacHack '88 The Macintosh Technical Conference. Ann Arbor, Michigan. Expotech Inc., (313) 882-1824.

June 13 – 15 The Design And Analysis Of Reusable Software. Computer Science Short Course. UCLA Extension (213) 825-1047.

June 18 Computer Swap Meet. Los Angeles County Fair grounds, Pomona. Call RK Productions at (800) 252-7927 for information.

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*As a community service, **MicroTimes** lists trade shows, seminars, and other special events in the Calendar of Events free of charge on a space-available basis. To improve the likelihood of your listing's timely inclusion, please make sure we have the necessary information no later than the first of the month two months before the cover date of the issue in which you'd like it to appear (i.e. the deadline for the March issue, on the street in February is January 1). Send to: MicroTimes Calendar of Events, 5951 Canning St., Oakland, CA 94609.*

News about user group meetings and other regularly scheduled activities should be sent to User Group Network at the same address.

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AT 6/10 MHz, 0 Wait	265
Baby AT 6/10 MHz, 0 Wait	265
AT 6/12 MHz, 0 Wait	319

Interface Card

Mono Graphic Card	$40
Color Graphic Card	40
Multi I/O (XT)	55
Floppy Disk Card XT/AT	25/45
Everex Micro Enhancer EGA Card 640x480, 132 column	125
Genoa Super-Hi 800x600	185
AT Multi I/O	45
AT WA2 Floppy/Hard Disk Controller	119

Modem

Easy Data 1200 In/Ex	$70/75
Easy Data 2400 In/Ex	160/165
Everex 1200 Baud	79
Everex 2400 Baud	175

Floppy Drive

Fujitsu 360K/1.2M	$69/83
Teac 360K/1.2M	76/86
Toshiba 3.5″ 720K	95
Toshiba 3.5″ 1.44MB	125

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BTC 5060 XT/AT	$40
BTC 5339 Enhanced	52
Keytronic Enhanced	54

Misc.

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LogiMouse C7	65
XT/AT Case	28/55

Hard Disk

Seagate-225 Kit	$255
Drive Only	210
ST-238 Kit (30M)	285
ST-251 (40M 39MS)	380
ST251-1 (40M 28MS)	450
ST-277R (60M 39MS)	469
ST-4096 (80M 28MS)	839

Monitor

Samsung Mono	$70
Samsung Color	225
Samsung EGA	330
Casper Mono	80
Casper Color	235
Casper EGA	345
NEC Multisync	555
Nanao 8060S	535

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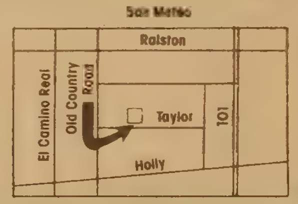

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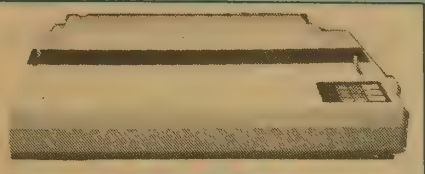

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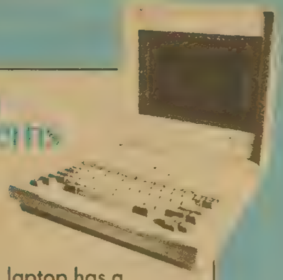

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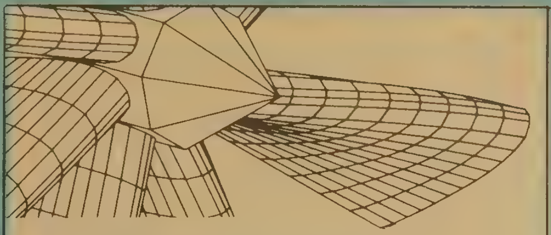

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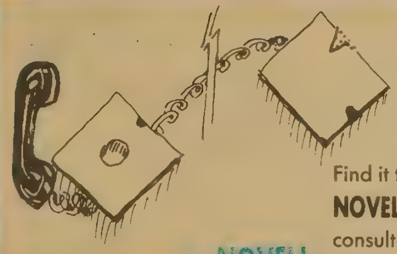

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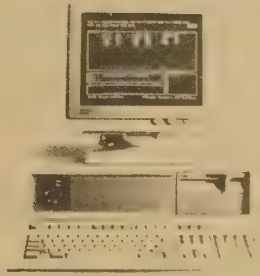

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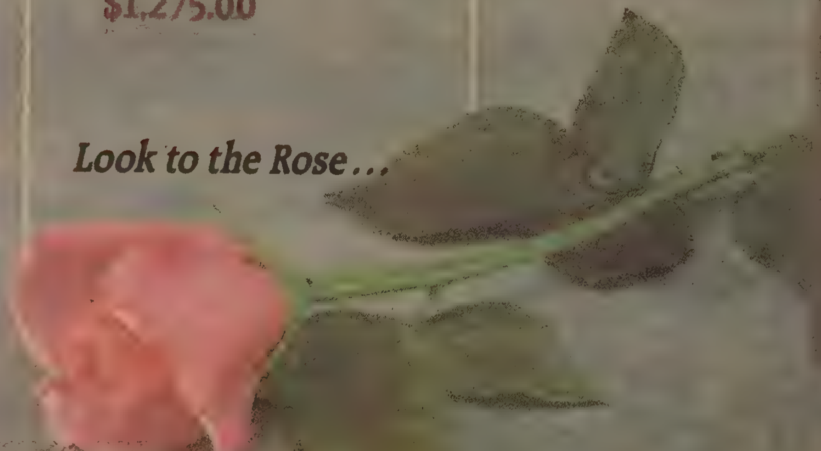

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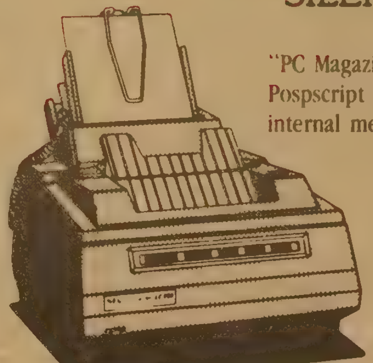

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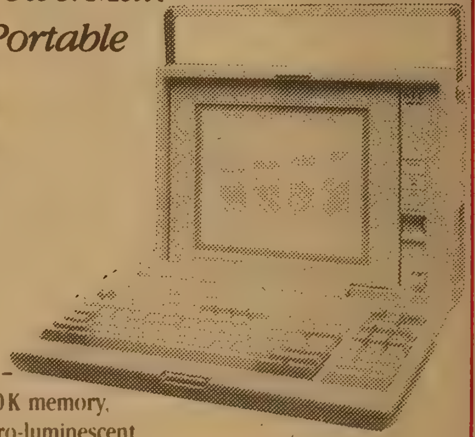

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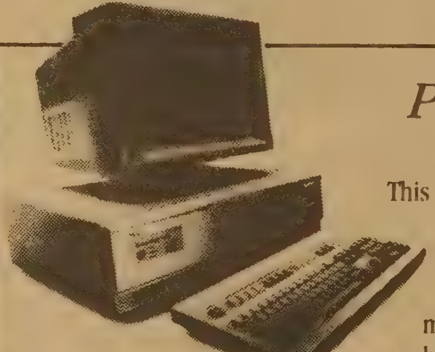

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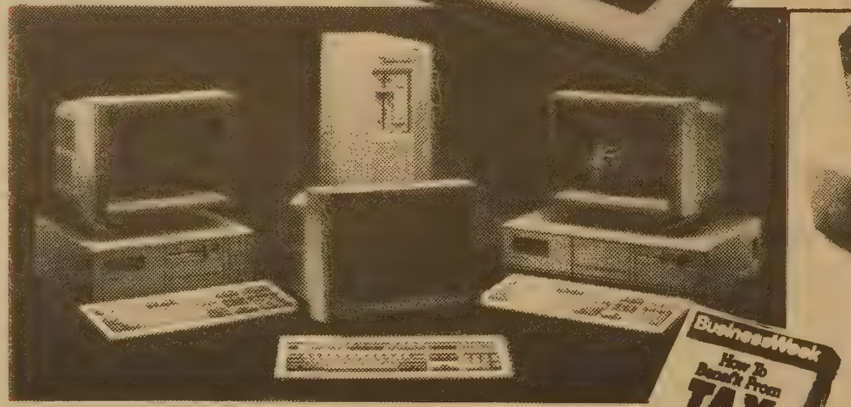

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By Paul Hoffman

Intel/NEC Case Starts Over; AT&T Invests In Sun; Apple And DEC Join Forces

Intel Vs. NEC Case Back To Square One

One of the most important chip cases in American law, determining whether the instructions in CPUs could be copyrighted, was derailed last month when the judge in the dispute between Intel and NEC quit due to a conflict-of-interest charge in the case. As he left the case, the judge, William Ingram, voided his previous rulings, making it unclear again whether the microcode which tells CPU chips how to operate was covered by U.S. copyright law. Intel had charged that NEC made an illegal copy of its 8086 CPU; NEC had countered that the microcode couldn't be copyrighted, and, even if it could, NEC hadn't copied it.

The judge had ruled earlier that microcode could be copyrighted, but had not ruled on whether NEC's design infringed on Intel's copyright. At the time, the ruling was hailed by large American chip manufacturers as a method of protecting them from foreign competition. However, it also locked in almost absolute monopolies for manufacturers of popular chips like the Intel family of chips used in IBM PCs or the Motorola family of chips used in the Apple Macintosh.

Late last year, NEC discovered that the judge unknowingly owned $80 worth of Intel stock through a stock club and asked that he be disqualified. That request was being decided by a higher court when the judge resigned voluntarily. The new judge will be William P. Gray of the U.S. District Court in Los Angeles. The first arguments in the new case will be heard this month.

AT&T Will Buy 20% Of Sun Microsystems Stock

Sun Microsystems and AT&T announced that the telecommunications giant will buy a 20% stake in the rapidly-growing computer manufacturer. The move gives Sun extra cash to spend on research and development and gives AT&T a seat on Sun's board of directors. AT&T announced that they plan to nominate Vittorio Cassoni, president of AT&T's Data Systems Group.

AT&T has had a disastrous four years in the computer industry, and its liaison with Sun could help pull AT&T out of its slump. Sun has proven to be an excellent research and development company for AT&T's UNIX operating system, and is on the forefront of the move to unify the various types of UNIX in the marketplace. AT&T may also decide to remarket Sun's computers.

The working capital will help Sun in the short run with their research. AT&T has agreed to buy 15% of Sun in any new stock that Sun issues at a 25% premium. This premium will net Sun approximately $50 million over what it would have gotten at normal prices. AT&T will buy the remaining 5% in the open market.

Sun and AT&T have made many technology agreements in the last few months. In October, AT&T and Sun agreed to work together on a unified version of UNIX that will run on Sun's RISC chip. That chip will also be produced by other chip manufacturers.

Although Sun claims that the agreement prevents AT&T from taking over Sun for at least ten years, many stock analysts disagree. One of the provisions of the agreement is that if another company buys a bigger share of Sun than AT&T already owns, AT&T can up its stake to the same amount. If another company buys 40% or more of Sun, AT&T could buy Sun outright. Although there are no known companies planning a hostile takeover of Sun, its prominence in the computer industry and its rapid growth could make it an attractive target in the next few years.

Not everyone was happy with the announcement. Sixteen computer manufacturers complained in a telegram to AT&T Chairman James Olson that the pact could lead to AT&T's ignoring or downplaying other attempts at standards, such as the international X/Open committee. Signers of the telegram included a wide range of UNIX computer manufacturers, including Apple, DEC, Hewlett-Packard, Apollo, NCR, Unisys, Honeywell Bull, Gould, Silicon Graphics, and MIPS.

Stock market watchers compared AT&T's move to IBM's move with Rolm. Initially, IBM bought a small part of Rolm's stocks and talked about their similar market views. Later, however, IBM bought more of Rolm and folded it into the IBM corporation. AT&T would have a much harder time doing that to Sun since the corporate styles are vastly different. However, if AT&T has more bad years in the minicomputer market, the prospect of having a well-respected and complete mid-range line might become very attractive.

DEC And Apple Sign Connectivity Pact

In a much-heralded announcement made at the beginning of the MacWorld Expo, DEC and Apple announced a joint plan to link their products more closely. The agreement by Ken Olsen of DEC and John Sculley of Apple indicates that the two firms will work closely on creating standard methods for DEC's VAX line of minicomputers and Apple's Macintosh line of microcomputers to share data. In addition, the firms will make it easier for VAXes to use Macintoshes as intelligent terminals.

Less than a week after the Apple-DEC announcement, DEC went further to say that it will also integrate micros from IBM and compatible manufacturers into its network. At that second announcement, Olsen said, "The Macintosh is just

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9	9	WordPerfect Library
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10	11	Mirror II
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14	3	Norton Utilities 4.0
2	4	Disk Technician Plus
–	5	Fastback Plus
4	6	Sideways
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11	10	Print Q
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–	5	Suitcase
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7	7	Stepping Out
8	8	Silicon Press
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Paul Hoffman is a freelance writer who has written five books about computers.

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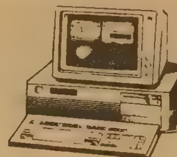

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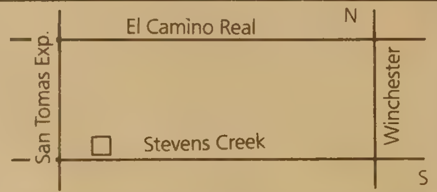

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one piece, although one of the more interesting pieces, of the broader strategy." It is likely that DEC will make stronger connections to computers running OS/2.

The Apple-DEC agreement makes it easier for Apple to penetrate business markets in which DEC has been successful. DEC has tried many times to create a successful microcomputer, each time having it rejected by both its own customers and non-DEC buyers. The pact makes it easier for VAX users to use Macintoshes and Macintosh users to connect to large minicomputers.

Although very few specifics were mentioned in the announcement, the firms did say that the outcome would be a better linking of Apple's LocalTalk network to DEC's DECNet system. DECNet is a open system based on a widely-published (and still unfinalized) standard called OSI (Open Systems Interconnect). The OSI standard is being formulated by the International Standards Organization. The result will be that Macintoshes will be able to share tasks such as data management and printing with VAX computers. Other companies can participate in the sharing simply by following the OSI standard. The firms claim that the agreement makes OSI one of the most important open standards in the computer industry. In addition, the firms said that they will work on methods for the systems to be able to share files and printers.

Conspicuously absent from the announcement was any mention of IBM. Both Apple and DEC have long attempted to thwart IBM's dominance in the connectivity market, but with little success. After the issue of IBM's SAA was raised during the question period after the speeches, both Apple and DEC stated that they were still working on connecting to SAA.

The two companies may or may not market each other's products. Both companies pledged to continue to compete in their current markets (the Macintosh II vs. the DEC MicroVAX). Both companies emphasized that there is no plan for either to purchase the other. More announcements about the pact will be made in August during a DEC-Apple developer's seminar.

Apple Introduces Printers, MS-DOS Connectivity Software, And MIDI Interface

Using the MacWorld Exposition as its platform for showing new products, Apple announced many long-rumored additions to its hardware and software lines. The most popular additions were three new LaserWriter printers, which replace the older LaserWriter and LaserWriter Plus. The three LaserWriter IIs cover a wider range of price than the previous series. All three printers use a new internal engine which produces blacker printing, and can hold more paper in their paper trays.

The high-end LaserWriter II NTX is a much faster and more convenient PostScript printer than the current LaserWriter. The NTX has a faster processor, and its two megabytes of internal RAM memory can be expanded by adding more RAM or by adding a hard disk through its SCSI port. Adding a hard disk is a low-cost method of storing hundreds more fonts or allowing for more complex drawings, according to Apple. It would also greatly speed up printing for documents that do not use the standard internal fonts. The list price will be $6599.

The mid-line printer, the LaserWriter II NT, is a slower version of the NTX printer without the SCSI capabilities; however, it can be upgraded to an NTX by changing its controller board. Although Apple allows users to upgrade their own printers, it strongly recommends that only dealers perform the work since the boards are sensitive to static electricity. The NT costs $4599, which means that

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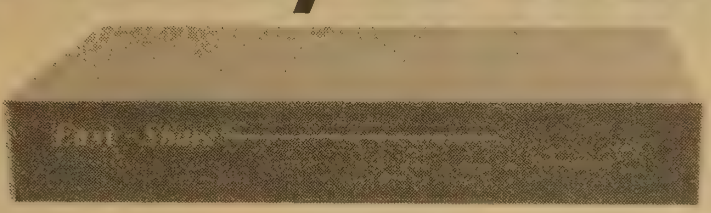

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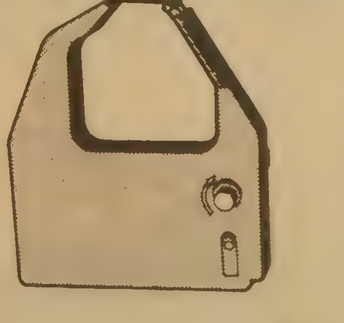

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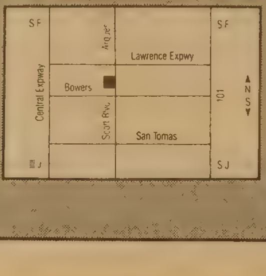

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it will probably cost less than the current LaserWriter.

The low-end LaserWriter II SC is Apple's first non-PostScript laser printer, although it will be capable of printing text and graphics at 300 dots per inch. The printer driver software supplied with the SC allows you to print text at this high resolution if your system has fonts that are four times the size of the font used on the screen. For example, if you use 12-point Helvetica font and your system has 48-point Helvetica, you will be able to print at the high resolution. Apple will supply these large sizes for popular LaserWriter fonts, and other font manufacturers also announced larger sizes. At $2799, the SC is more expensive than other non-PostScript printers, but it can be upgraded to the NT and NTX later.

Apple also lowered the cost on its LocalTalk PC card to $249 from $399. LocalTalk (previously AppleTalk) is Apple's networking scheme for Apple computers and IBM PCs. Apple also released the AppleShare PC software product, announced last August, which allows users to treat an IBM PC as a disk server, and allows the PC to access files and printers on the network.

Apple also released a MIDI (musical instrument digital interface) interface box for the Macintosh and Apple IIGS. The $99 box allows the computer to control musical instruments that have their own MIDI interfaces. There are already many programs for both the Mac and IIGS that work with the box. Apple also showed the interface at the National Association of Music Merchants conference that was held at the same time as the MacWorld Expo. Apple, 408/996-1010.

Claris Announces Upgrades To Apple Products

Apple's software spinoff, Claris, announced upgrades to its mainline products. *MacWrite* now has a spelling checker. *MacPaint* can have many windows open at the same time, and the windows can be at different resolutions. *MacDraw II* will be much faster than the original *MacDraw* and can be used at much higher accuracy; it will cost $395. *MacProject II* handles much more complex resources than its predecessor, and will cost $495. Claris also introduced a form-handling package called *SmartForms*.

Claris also announced that it would do extensive technical support for its programs. The technical support phone number, 415/962-0371, will be staffed from 6 AM to 8 PM Pacific Standard Time during the week. Claris will also participate on electronic mail networks to support its products.

Claris took out its first advertising, premiering in the *Wall Street Journal*. Although both Claris and Apple have made many statements about how separate the two companies are, Claris has angered many other software developers by seemingly keeping close ties with Apple. For instance, Claris uses the same advertising agency (BBD&O) as Apple, as could be seen from the style of the advertisements. Claris also uses the same public relations firm, Regis McKenna. Claris says that the teams working on the Claris accounts at both firms have been told to avoid contact with the teams working on Apple's accounts. Claris, 415/962-8946.

Other MacWorld Expo Announcements

Many other companies used the MacWorld Expo as a vehicle for making product announcements.

- Activision showed an advanced report generator for *HyperCard*. The program, *REPORTS!*, gives *HyperCard* more capabilities for printing from *HyperCard* stacks. The stack costs $100.
- Addison-Wesley showed Volume 5 of *Inside*

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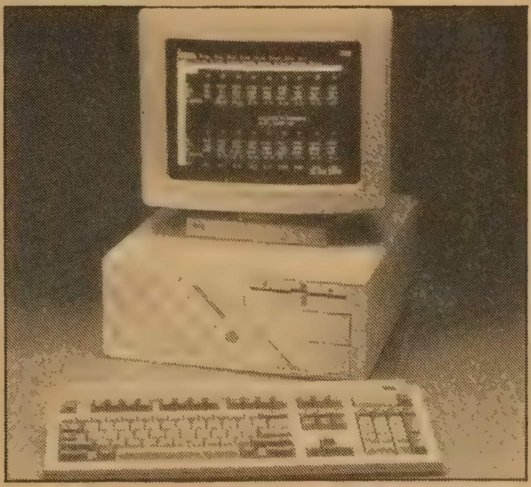

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The WYSEpc 286 Model 2108 is designed to provide the best value in a PC AT-compatible system. It is based on the 16-bit 80286 processor running at 8 MHZ (one wait state) and comes standard with 512 K, 1.2 MB internal 5 1/4″ diskette drive, serial/parallel adaptor and seven PC-AT-compatible accessory slots (five 16-bit and two 8-bit slots). The model 2108 is based on the WYSE Modular Systems Architecture, which allows you to increase your systems performance as your needs grow.

$1,384 **List $1,604 (includes WYSEpc 286 Model 2108 and enhanced AT-style keyboard)**

WYSEpc 386 Model 3216

The WYSEpc 386 Model 3216 provides the computation power of a dedicated 32-bit supermicrocomputer for the price of a personal computer. It utilizes the 32-bit 80386 CPU Chip operating at 16MHZ and includes 1 MB RAM, 1.2 MB internal 5 1/4″ diskette drive, serial/parallel adaptor, socket for either 80387 or 80287 numeric coprocessor chip and six PC-AT-compatible accessory slots (four 16-bit slots, two 8-bit slots). The WYSEpc 386 is the ideal choice in applications that demand the highest level of performance.

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On The Firing Line

A 386 In Your PC

By Stephan Wickham
and the Diamond Software Technical Team

As long as computer innovators keep designing miracles, the old trusty IBM PC will not be thrown on the scrap heap. Years of service life can be added to your personal computer by adding one of the 80386 coprocessor boards from Intel or Quadram. It is true that you can't gain all the advantages of a machine built from the ground up as an 80386, but in the end you give up few of the major benefits.

Quadram's Quad 386XT and Intel's Inboard 386/PC are designed to easily slip into one of the standard full-size PC expansion slots. Your machine will beat with the heart of a powerful 80386, just like the expensive desktop units from companies like Compaq. If you need maximum 80386 performance, it is possible to upgrade your machine with a motherboard replacement, which delivers processing speed as fast or faster than many OEM 386 PCs. A motherboard replacement also gives you 16-bit slots for IBM AT style cards and allows you to take advantage of the super-fast hard disks that run off 16-bit hard disk controllers. But there is a catch: 80386 mother boards cost over 50% more than one of the new accelerator cards from Intel or Quadram. So if you have applications that require high speed processing, but don't need high-speed disk access, you can enjoy the wind-in-the-face horsepower that a simple card in the slot upgrade can bring.

The Intel Inboard

The Intel Inboard is very easy to install and runs with most of the everyday applications on the business market. Programs such as *WordPerfect, Lotus 1-2-3, AutoCAD* and *Ventura* run without a hitch. The documentation provided is excellent and will serve to make your installation a breeze. Intel even provides two boxes for you to put your 8088 and 8087 in after you remove them from your system.

To install an Inboard, just remove the 8088 from your system's mother board and plug the Inboard into a slot in the PC. A ribbon cable is then run from the empty 8088 socket to the Inboard add-in card. There are no dip switches or jumpers on the Inboard 386/PC to set. The new system is configured through a fully automatic program. If you had less than 640K conventional memory on your PC before the upgrade, you will need to set your system switches on the motherboard of your PC to the 640K setting. This is because the Inboard provides a full 640K of 32-bit conventional memory. The remaining 384K of memory on the Inboard is divided between 128K for the basic input/output system (BIOS) and 256K that becomes extended memory.

Since the BIOS is cached in fast 32-bit memory, it can be accessed quickly without the slow speed common to 8-bit systems. The advantage is easily seen when producing a directory listing that flies off the screen. As an added plus, users with EGA cards can copy the EGA's BIOS into the Inboard's 128K BIOS memory segment.

The one weak point of the Inboard 386 in a PC installation is that the processor can be so hungry for data that the I/O channels will be hard pressed to keep up with its appetite. This is because the 8-bit I/O hard disk controller card is no match for the 80386's ability to absorb data. Intel tries to remedy this by providing a program that places a disk-cache in extended memory to store the most frequently used data. This works well for many applications, but it is no match for a full 16-bit controller.

The Inboard 386/PC has about 80% of the power of the 16MHz Compaq Deskpro 386, because the 1MB of memory on the Inboard has not been optimized. Unlike the Intel Inboard 386/PC, many 80386 systems use interleaving or memory caching in such a way as to produce zero wait states with standard Dynamic RAMs (DRAM). The Intel Inboard architecture automatically compensates for its non-optimized memory by adding two wait states. Even so, the Inboard 386/PC returns a respectable 2.476 millions of instructions per second (MIPS), which is a vast improvement over the IBM XT's .305 mips.

The Intel Inboard 386/PC has been tested in the IBM PC and IBM XT, Compaq Portable and Portable Plus, and the Tandy 1200HD. It is compatible with Intel Above Boards with the EMS 4.0 expanded memory specification. An expanded memory driver that can be used with Intel Above Boards is provided with the Inboard. The Inboard also includes a device driver for converting the extended memory on the Inboard to EMS. It is important to note that you can't configure the system for both types of memory at the same time.

The Quadram Quad 386XT

The Quadram Quad 386XT is installed into an IBM PC in the same manner as an Intel Inboard 386/PC. The Quad 386XT does not provide conventional memory in the same fashion as the Inboard. The Quad uses a device driver to control the 80386's internal memory management unit; it maps the operating system and applications from the system board's conventional memory to the Quad's extended memory. This results in DOS and applications executing in 32-bit memory. On the Intel Inboard the 32-bit memory is used to fully replace all conventional memory on the PC's system board. Users are well advised to note that they will still need 640K of conventional memory for their PC system board separate from the memory on the Quad, a fact which Quadram fails to explain in the documentation. If users are not careful, they will read the Quadram manuals and think they can take out any memory boards that add to system memory (such as AST Sixpaks). You must leave them in for the Quad to work properly.

The Quad memory approach is quite rational. It swaps rather than replaces 8-bit with 32-bit memory. This leaves the 8-bit memory for other uses such as disk caching. The idea is that you've paid for this conventional system memory, so use it! Care should be exercised when setting up a system that uses this type of memory architecture or a system can start running like it's crawling through mud. It is recommended that the conventional system memory on the PC be set up as a disk cache or it might be grabbed by programs such as *DESQview*. The technical care necessary in the Quad installation might make it a less ideal product than the Intel Inboard.

The Quad is slightly faster than the Inboard 386/PC. This board hums along at 2.619 MIPS. The Quad provides its own BIOS and at the time of writing this article there are no known major incompatibilities. The Quad 386XT should work in a greater variety of PC compatibles than the Intel Inboard 386/PC. The Quad 386XT is packaged with a software device driver to convert the Quad's extended memory to expanded memory specification (EMS 3.2). Also included are a RAM disk and print spooler that can use conventional, expanded or extended memory. Additional 2MB or 8MB memory daughter cards will be available soon.

The Weitek 1167 Floating Point Processor

Power users, please take note that the Quad 386XT has a socket that is compatible with the Weitek 1167 floating point processor. This should appeal to users of power hungry applications such as CAD and numerical analysis. The Weitek 1167 is a board set built around the Weitek 1163/64 floating point multiplier/adder with a chip designed by Intel and Weitek to integrate the new coprocessor with the 80386 CPU. The board snaps onto the 121 pin Weitek socket that is a superset of the 80387 coprocessor. A Weitek compatible socket can also be found on such 80386 computers as the Tandy 4000, AT&T 6386, Compaq 386/20, Hewlett-Packard RS/20 and Wyse 386pc. The Weitek runs at two to four times the speed of an 80387 and about 16 times the speed of an 80287. To make full use of this new coprocessor you will need software written to take advantage of it.

The Hauppauge 386 MotherBoard

Customers wanting the ultimate PC upgrade might consider the Hauppauge 386 MotherBoard. The 386 MotherBoard is a complete replacement for the system board in your IBM PC or IBM XT. There are two models made. The 386 MotherBoard/XT is for users that have the eight slot IBM system board; the 386 MotherBoard/PC is for users that have the five slot IBM system board. The Hauppauge 386 MotherBoard comes with 1 MB of 100ns RAM, which is interleaved. Maximum performance is achieved, with most memory access requiring zero wait states.

There is a 32-bit slot available on the Hauppauge 386 MotherBoard for the addition of up to 12 MB of 32-bit memory. The Hauppauge 386 MotherBoard provides two 16-bit IBM AT compatible slots, designed for cards that will fit in an IBM XT/286. In addition, the 386 MotherBoard/XT provides six 8-bit only slots, of which two are for half length boards. The 386 MotherBoard/PC provides three 8-bit only expansion slots. Eight-bit only cards such as disk controllers, video cards and tape controllers are compatible with the 8-bit slots. These boards run at 2.933 MIPS.

The Hauppauge MotherBoards, Intel Inboard 386/PC and the Quadram Quad386XT can be purchased from Diamond Software at (415) 633-2588. Our technical department is available for your questions at (415) 633-2589. Please call us. We are here to help. ☐

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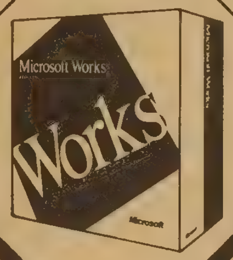

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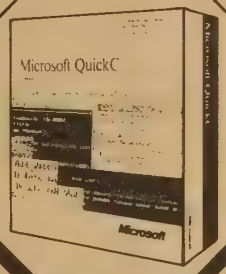

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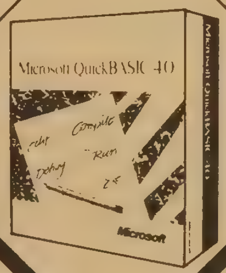

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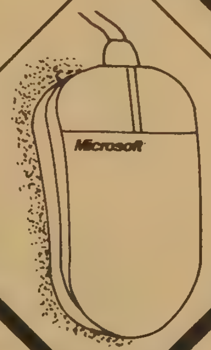

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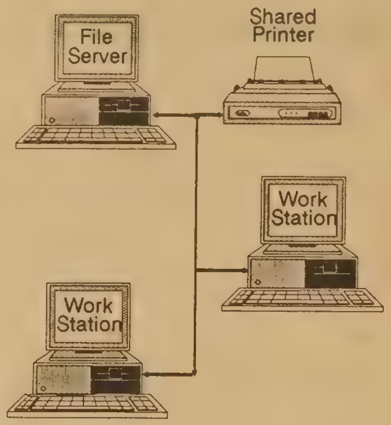

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Macintosh, which includes the Mac SE and Mac II. They also showed *HyperCard Power: Techniques And Scripts* by Carol Kaehler, a member of the *HyperCard* team.

- Adobe announced an upgrade to *Illustrator* that supports color and new special effects. The software will let users specify colors in terms of the Pantone Matching System that is common in the print industry. The program will be $495, and will be released in May.
- Adobe Systems showed its Display PostScript on five different computers: a DEC MicroVAX, a Sun microcomputer, a Mac II, an IBM RT, and an IBM PS/2 Model 80. Adobe is trying to convince computer manufacturers to use Display PostScript technology to control the screens of their computers.
- Coda Music announced a program that allows musicians playing a MIDI keyboard to record their music in standard musical notation. This greatly reduces the amount of work required to turn played music into a written composition. The software will cost $795.
- CompuServe has changed its *Navigator* program from being shareware to being a commercial program that costs $59. *Navigator* allows users to automatically choose which information they want to see in CompuServe. The program then dials into CompuServe and retrieves the information.
- Cypress Research showed a combination 2400 baud modem/9600 baud fax system. The peripheral will cost $900 and will work in the background in MultiFinder.
- Emerald City Software displayed a new environment for people writing programs that produce PostScript. *Lasertalk* generated a great deal of excitement among programmers, since it lets them view the output of their actions on the screen, making debugging much easier. *Lasertalk* costs $249, and includes on-line PostScript operator descriptions.
- Innovative Software created a stir by having a high-tech booth to show off its new spreadsheet, *Wingz*. Reminiscent of lines at Disneyland, conference attendees lined up to see the preview movie. The program can produce three-dimensional graphs in color that are dynamically linked to the data.
- Kodak showed the *Datashow HR*, a panel that connects to a Mac SE or Mac Plus and allows an overhead projector to display the Mac's screen. The panel costs $1,495.
- MacroMind showed a *VideoWorks II* driver for Apple's *HyperCard* which lets you add color and animation to *HyperCard* stacks. Users can use "clip animation" and sound created in *VideoWorks II* in any of their stacks. The driver costs $100. MacroMind also showed the *VideoWorks II Accelerator* that speeds up *VideoWorks* animation to between 30 and 40 frames per second. The compiler allows even complex presentations to be shown at movie-quality speeds, and costs $100.
- Microsoft announced an agreement with Genigraphics to jointly develop desktop slide-making services. Users of Microsoft's *PowerPoint* presentation software will be able to output their pictures on LaserWriters and send them to a Genigraphics service bureau to turn them into slides.
- Mirus also introduced a slide recorder called the FilmPrinter that connects to the Mac's SCSI port. The recorder copies onto standard 35mm slide film at a resolution of 2000 lines, and will be available in approximately six months.
- Radius announced the Accelerator 25, an accelerator board for the Mac SE that contains a 68020 CPU running at 25 MHz. This is significantly faster than other accelerator boards, which usually run at 17 MHz. It will cost around $2000.

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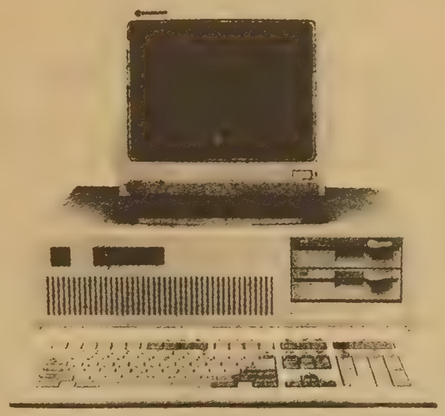

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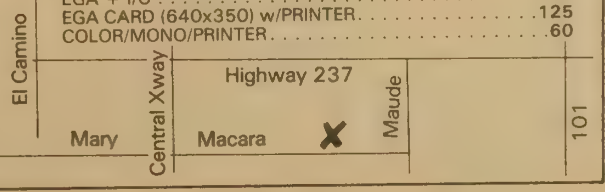

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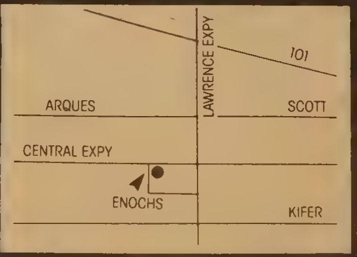

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•Second Wave introduced a chassis that allows Mac Pluses to use cards intended for the Mac SE. The chassis is claimed to work with all major SE expansion cards, such as accelerator boards and mainframe communications cards. It costs $995.

- SuperMac introduced a 24 bits-per-pixel color board for $2995. The board was shown in many booths around the show.
- Symmetry Corporation showed a desk accessory that can view most *HyperCard* stacks. *HyperDA* allows users to view stacks but not to update them or add information. It works on any Macintosh with 512K of memory, and costs $69.
- Tangent Technologies introduced two LocalTalk boards, one for IBM PCs and one for IBM PS/2s. The boards support all LocalTalk software from Apple, TOPS, and other vendors.
- TOPS announced the TOPS TeleConnector, a device that allows you to create a LocalTalk network using telephone wiring. The TeleConnector is similar to Farallon's PhoneNet connector, and costs $59.
- Truevision introduced the NuVista high-resolution graphics board for the Mac II. It uses the Texas Instruments 34010 graphics processor, and supports up to 32 bits per pixel at 1024 by 1024 pixels. It will cost $5995.
- *WordPerfect* for the Mac is still not available, but the company showed off a beta version of the software. Most of the keystrokes available on the PC version are the same on the Mac version.

Lotus Will Release Modern Jazz

After taking a drubbing for the limited scope and poor performance of its *Jazz* product for the Macintosh, Lotus has announced a new product, *Modern Jazz*, to be its successor. Lotus claims that to have kept the features of *Jazz* that owners liked and added many new features, such as macros and 3278 emulation. The new program requires one megabyte of RAM and an 800K disk drive. It will cost $395, and will be available to *Jazz* owners for a $95 upgrade fee. Lotus, 617/577-8500.

Microsoft, Ashton-Tate, And Sybase Join Forces To Create SQL Server For OS/2

In a major move to counter the effects of IBM's OS/2 Extended Edition on PC manufacturers, Microsoft and Ashton-Tate will sell an OS/2 data base management system that allows personal computers to access data on other PCs, as well as on minicomputers and mainframes. The software, called *SQL Server*, will be marketed to end users by Ashton-Tate and sold to hardware manufacturers by Microsoft; it will not be available for at least six months. The technology behind the software was developed by Sybase in Berkeley, California.

SQL Server allows data to be accessed in a standard fashion anywhere on the network. SQL is a standard for requesting data; thus, an SQL server is a system that can respond to SQL-formatted requests for data. IBM has been pushing the SQL language standard for many years, and many database manufacturers have responded by making their products compatible with SQL.

The package will be used as a software platform for other vendors. Ashton-Tate has already stated that it will come out with a version of the popular *dBASE* program that can talk with the SQL Server platform. This means that most current *dBASE* programs will work properly in the new networked environment. Other software vendors, such as Borland and Blyth, said that they will support the platform as well.

The program will cost between $1500 and

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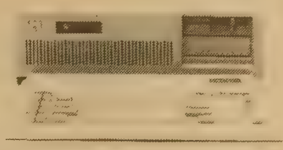

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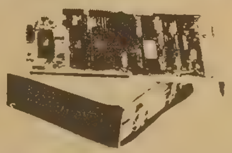

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$3000, according to Ashton-Tate. In order to run *SQL Server*, the network will also have to run Microsoft's OS/2 LAN Manager or IBM's OS/2 LAN Server. Thus, the entire system will be very expensive and will probably be used mostly in corporate data environments. Many networked data base management systems that run under MS-DOS cost significantly less than *SQL Server*. Microsoft, 206/882-8080; Ashton-Tate, 213/329-8000.

Berkeley Softworks Will Release GEOS On Apple II

The popular GEOS operating system for the Commodore 64 and 128 will soon be available for the Apple II, according to its manufacturer, Berkeley Softworks. The operating system has many of the best features of the Macintosh, such as icons and windows, and allows other developers to create advanced programs easily. With an installed base of over four million Apple IIs, Berkeley Softworks expects to make a significant market penetration. GEOS for the Apple II will also support links to GEOS for the Commodore machines, as well as support other Apple hardware such as high-quality printing on the LaserWriter. Berkeley Softworks, 415/644-0883.

There's No More Britton Or Lee At Britton Lee

The founders of database company Britton Lee, David Britton and Geoffrey Lee, resigned last month to begin another firm. The two founders retain 15% of the company's stock, but hold no management positions or seats on the board of directors. Their new firm will specialize in software for personal computers. At the same time, Britton Lee laid off about 20% of its staff due to recent losses. The new president and chief executive officer, John Cavalier, said that the losses led the company to try to cut $5 million from its operating costs.

Japanese Companies Announce New 32-Bit CPU

Fujitsu, Hitachi, and Mitsubishi jointly announced the availability of a new 32-bit microprocessor to be used in engineering and manufacturing workstations. The chip, called the G Micro 200, is already compatible with UNIX, and runs at 6 million instructions per second. The chips are a product of Japan's TRON real-time operating system nucleus, and will be especially useful in high-end engineering and robot-control systems. Since Intel and Motorola already control the vast majority of the high-end CPU market, the Japanese companies may have a hard time making inroads in the the American market. However, the chips might be attractive in areas where the American chips have traditionally been weak, such as Europe and Asia. With the right software, they also could sell well in the growing factory automation market where real-time control is important.

Microsoft Word Now Available Under XENIX

With the XENIX market growing rapidly, especially in the government market, Microsoft has begun making its most popular MS-DOS applications available for XENIX (XENIX is Microsoft's implementation of UNIX). They recently announced that Microsoft *Word*, one of the most popular word processing products on the PC, has been ported to XENIX. The XENIX version of *Word* has all the features of MS-DOS *Word* version 3, including style sheets and outlining. The program costs $595. Microsoft, 206/882-8080.

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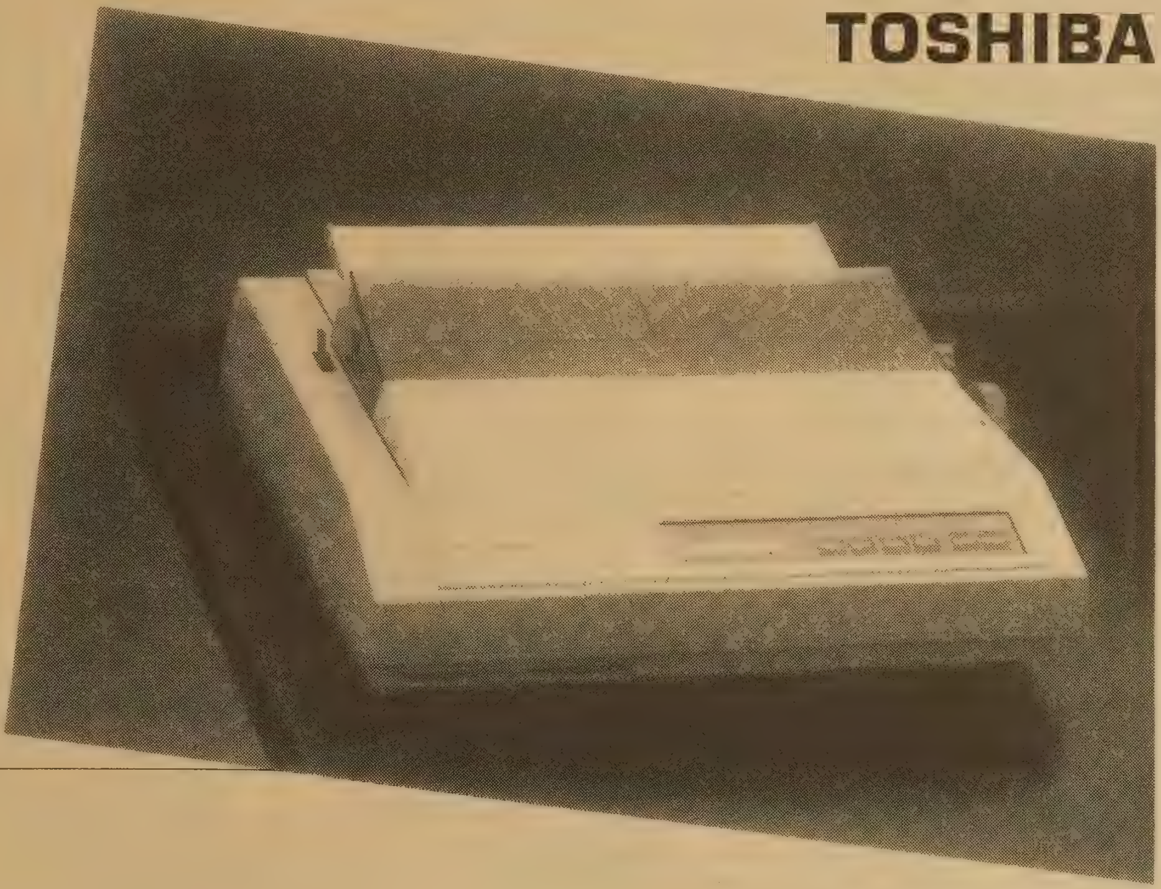

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CPU Wars Heat Up Again With New Benchmark

Which is faster, a 68020 or a 80386? Of course, it depends who you ask and what their vested interest in the answer is. A new benchmark from a language company that supports both chips may surprise many people. FORTH, Inc., which produces the FORTH language for a wide variety of computer hardware, recently released benchmarks which indicate that the 80386 is 40% faster than the 68020. Its polyFORTH operating system uses both chips in their full native mode; many other benchmarks have tested the 80386 in the "compatibility" mode, which is inherently slower. The results indicate that operating systems designed specifically for the 80386 that bypass any compatibility with other Intel chips can run significantly faster than ones that are designed for the 68020. Motorola's recent announcement of the 68030 may bring up the question of speed again, since it is supposed to be twice as fast as the 68020. FORTH, Inc., 213/372-8493.

COMPAQ Cuts Prices On Deskpro 286

The price of the Deskpro 286 series, COMPAQ's main line of computers, was reduced by 10% last month. With the competition from other well-known manufacturers such as AST and Epson heating up, COMPAQ reduced prices in order to stay competitive. The new list prices are $2,699 for the Model 1 (no hard drive), $3,599 for the Model 20 (20 megabyte hard disk), and $4,499 for the Model 40 (40 megabyte hard disk). COMPAQ, 713/370-0670.

Many New Games Announced At Winter Consumer Electronic Show

The Winter CES is a popular time to introduce the first set of post-Christmas games, and many manufacturers showed off new series of advanced home computer games. In the low-cost games area, Thunder Mountain displayed ten games that cost $15 each and four that cost $10 each. Mindscape introduced a contest with rub-off prize cards in most Mindscape products. Infocom introduced *INFOCOMICS*, which are computerized comics instead of games. The comics, priced at $12, allow you to choose alternate paths through the complex story lines; they will be available both in computer stores and comic book stores. Brøderbund introduced a third in its popular series, *Where In Europe Is Carmen Sandiego?*, which retails for $40.

Time Line PC Project Management To Link To CA-TELLAPLAN On Mainframes

Breakthrough Software, makers of the popular *Time Line* project management software for PCs, announced *TELLAPLAN Link*, a software package that lets *Time Line* users access mainframe data created by *CA-TELLAPLAN*, one of the most popular mainframe project management programs. *TELLAPLAN Link* lets users perform normal project planning in Time Line and then export the data to the mainframe in order to incorporate the project plan into larger plans that are coordinated by *CA-TELLAPLAN* (which is a product of Computer Associates, one of the largest software companies in the world). *CA-TELLAPLAN* can also be used to produce higher-quality graphics output, according to Breakthrough, which is a division of Symantec. Breakthrough Software, 415/898-1919.

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• storage dimensions	
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PFS:PROFESSIONAL FILE	132
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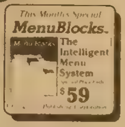

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Should You Buy A Macintosh To Get HyperCard?

By Birrell Walsh

Living in the MS-DOS world, I hear rumblings over the line in Mac land. It's like Canadian politics — you know they have them, but you don't know a lot of detail. Then Apple introduced *HyperCard*, and the rumblings grew to a roar. Danny Goodman's *HyperCard Handbook* was on B.Dalton's and Waldenbooks' bestseller lists. Everyone I knew was talking about this thing. Every magazine seemed full of it. What was it they were all so enamored of?

I found out. It cost me $200 of my own money. My editor will tell you I do not part with money gracefully.

First I went out and bought (for $30) *The Complete HyperCard Handbook* by Danny Goodman. It weighs several pounds and has sold several hundred thousand copies in the last few months. I had to hunt to find a copy. I got it though, and I read it like a science-fiction novel, all 720 pages.

That book got me so jazzed that I had to, just *had* to try the program out. I went down to the computer room at work where they have Macs. We are converting from DOS to Macs at my shop, which is a story in itself. The fellows were kind enough to let me try *HyperCard* on their machine. So simple, so smooth, so like a cartoon. Yet in a few moments I had created a little two-frame animation. If you have ever tried to make an animation with DOS programming languages, you know how difficult it can be. Even dedicated animation products make it difficult. I did it in five minutes. This was impressive indeed.

I resisted buying a Mac. It was hard, but not that hard just after Christmas. Instead I shopped around until I found the best price I could to rent a Mac, a hard disk, and a printer for eight days. It was at Frog Computer in Berkeley, an establishment run out of a barn near a swamp, but with great prices and friendly people. For $167 I made it out the door with the Mac Plus, the printer and the hard drive and went home to immerse myself in this thing.

Emerging a week later with glazed eyes and a long-suffering wife, I can say three things about this system:

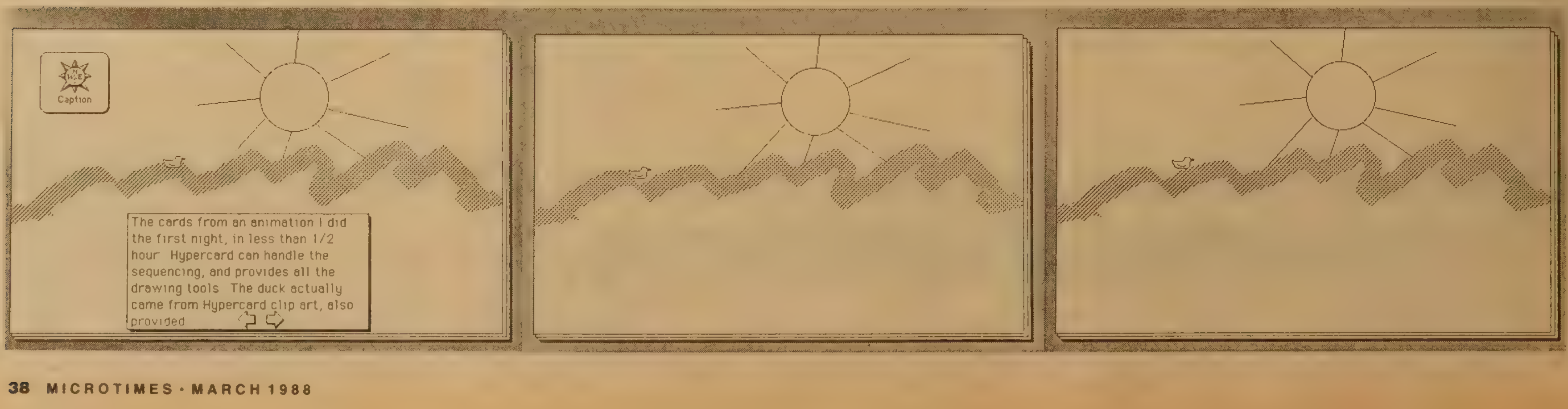
- It uses the Mac interface superbly, and that interface is lovely.
- It allows you to create a really personalized information system that you can also share with other people. In one week I made six different types of applications from scratch. They ranged from a personal accounting system and a network mail system to cartoon animation.
- Behind the smoothness and the facility is a very subtle, very powerful object-oriented programming system, the best I have seen.

The only negatives are its hunger for memory and its slowness. You really do need a meg of memory and a hard disk to use *HyperCard*. The slowness is relative. It is faster to use *HyperCard* than to load and unload all the applications it may replace.

Meet The Macintosh Interface

If you use DOS, you have heard of the Mac interface. You have seen an imitation of it — a pale imitation — in Microsoft *Windows*. Everything is done by pulling menus down and clicking on your choice. To copy a file, you grab its icon and move it into a picture of a file folder. Grind, grind — it's copied. It's so simple, so clear. And all the applications have the same interface. Once you master one, you have them all about half-learned.

This means that the training time for people who use computers is cut in half. That's the time it takes you to learn an application, and the time it takes the people who work with you or for you to learn it. Figure how much it costs to pay them while they learn. Figure how much it costs to get someone to teach them. Figure your losses while they try to decode DOS, and DOS's charmingly opaque applications. That's what it costs you to make a DOS computer system work in your house. Now take half that amount. That's what you save by using the Mac. A report by Peat Marwick, quoted in *Infoworld* (1/25/88), found a 45% improvement in productivity for "knowledge workers"



The cards from an animation I did the first night, in less than 1/2 hour Hypercard can handle the sequencing, and provides all the drawing tools The duck actually came from Hypercard clip art, also provided

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using a Mac.

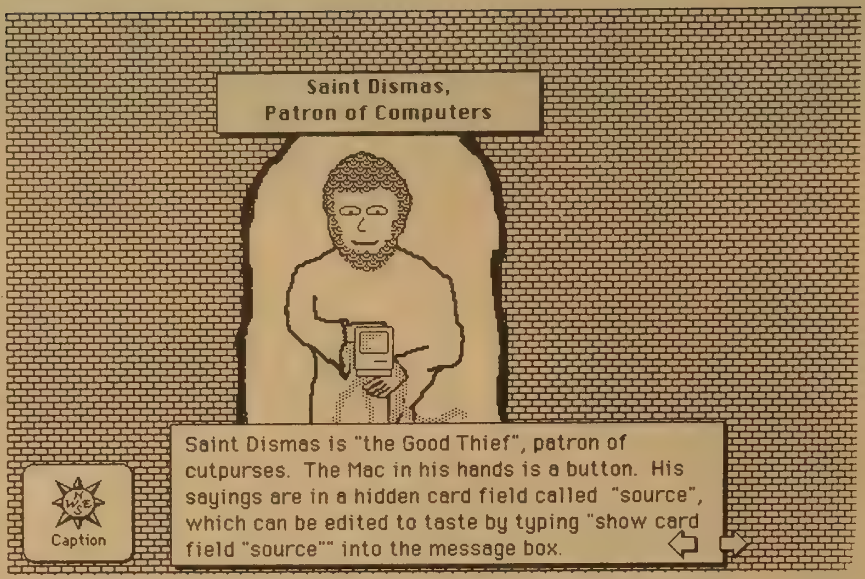
HyperCard is the same, only more so. It uses a menu structure that is like all the other applications, except you can tear the menu off (by holding the mouse button down while dragging the cursor out of the menu — a copy of the menu follows the cursor). This new feature means that you can move the tool menu off to a corner of the *HyperCard* screen, and leave it open while you tinker.

The tool kit allows you to choose a browsing tool, a button tool, or a field tool. The browsing tool is what you use to operate the system — to push buttons, to move to a text field to write material into it. The button tool and the field tool allow you to move, resize, and work on buttons and fields.

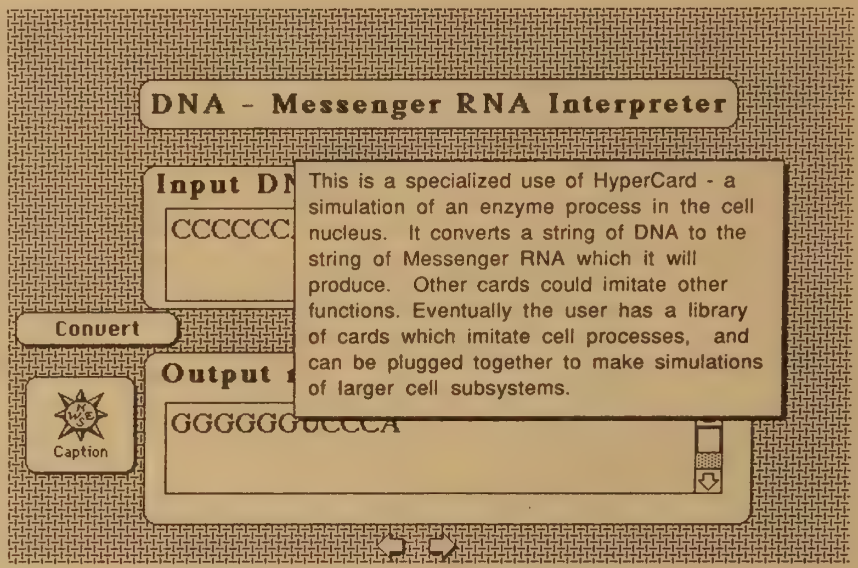
"Work on" means just about everything you can think of. When you select a button or field, you get access to the "button info" or "field info" choice on the "objects" menu. You can change the its icon, its shape, and the font used to write its name. You can make it transparent, opaque, or drop-shadowed. You can view, modify or change scripts that tell the button or the field what to do.

In DOS I have never been confronted with such choices about any screen object. I consider it a major achievement to get a program to acknowledge my Logitech Mouse, let alone choose a font. But this is the Mac interface at its most accessible. Because all these things are available to you, you can easily forget that only a master programmer with a lot of spare time could do any of them in MS-DOS languages. In *HyperCard*, you have access to these features by snatching them off a menu.

You also have a very complete set of drawing tools. You can draw, paint, spray-paint, make squares, rectangles, spinning polygons and circles. You can fill them and empty them with any of 40 patterns. You can use straight-line and grid tools in your first shaky steps into this graphic medium, and then move on to more noble efforts. Or you can (as I did) borrow from *HyperCard*'s fairly extensive set of clip art. *HyperCard* also welcomes clip art from other programs — another virtue of the Mac is its clipboard for copying both text and graphics between programs.



Saint Dismas is "the Good Thief", patron of cutpurses. The Mac in his hands is a button. His sayings are in a hidden card field called "source", which can be edited to taste by typing "show card field "source"" into the message box.



CCCCCC

GGGGGGUCCCA

This is a specialized use of HyperCard - a simulation of an enzyme process in the cell nucleus. It converts a string of DNA to the string of Messenger RNA which it will produce. Other cards could imitate other functions. Eventually the user has a library of cards which imitate cell processes, and can be plugged together to make simulations of larger cell subsystems.

Yes, But What Good Is It?

OK, says Gentle Reader, so you like the Mac Interface. What is *HyperCard* good for?

That is a little like asking what a computer is good for. There are so many uses. On my first day with my rented system, I expanded my five-minute two-card animation into a twenty card epic with separate background and foreground. "Cell animation," I think Disney called it. I made a spray-paint sea and borrowed a duck from the clip-art stack. For the last few frames, I modified the duck with the *HyperCard* paint tools so it could fly off the screen. This whole job, including a couple of re-dos, took me about 40 minutes. That means that you or one of your employees can do animated presentations with *HyperCard*, to make your case to clients or senior management or the IRS auditor or whomsoever you need to convince — without buying a separate program like Paul Mace Software's GRASP in the DOS world.

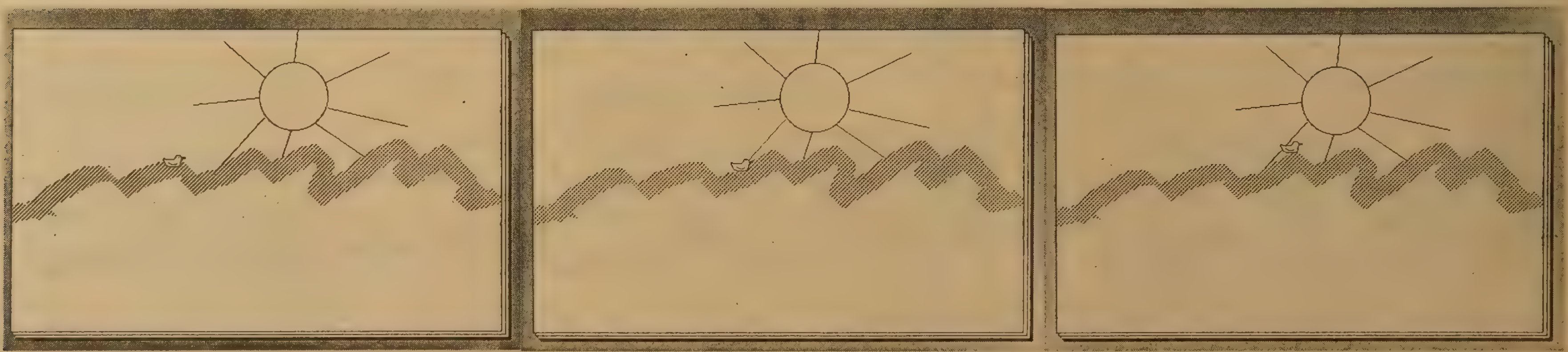
Time to Get Serious. I wanted to have a way to keep records of all my business expenses. Another file should show all my income, by project. A third, summary card would tell me my current net. *HyperCard* made this so easy that I was finished in an hour and a half. That included designing all three stacks — income, expense, and summary. I put fields on each of the record stacks that allowed me to enter the date, who the money came from or went to, the purpose, and so forth.

Text fields in *HyperCard* are easy to design. You paint them on with the "field tool." You can set all the attributes in the "field info" window. And you do not need to worry about data types. *HyperCard* stores all information as text. Dates, numbers, Boolean true or false values, text itself — all these are stored in text fields. *HyperCard* converts them into numbers or whatever internally, without requiring you to attend to the matter at all.

The summary card has six buttons, all conceived, designed and installed within my hour-or-so design time. They are of interest because each button sends messages to other stacks. The "browse" buttons for income and expense link to those stacks. The "New Expense" and "New Income" buttons send me to the last card of the respective stack, and then make a new (blank) card for me to fill in. The "Update the Net" button actually has some script work in it. It goes to each of the stacks, and then steps through the cards of that stack, adding the amount on the card to local variables in the script — "Income" and "Expense." Then it returns to the summary card and places Income, Expense, and (Income-Expense), preceded by dollar signs, in the appropriate fields. It also updates the "Net As Of:" field, so I know how recently I did my last update.

It was extraordinary just how easy it was to work with *HyperCard* as a business tool. This is a simple application, true, but it was ready to go in less time than it usually takes to read a chapter of documentation in a DOS program.

Because the Hypertalk language is powerful, you get leverage. A little work produces a lot of usefulness. In the DOS world, only Borland's *Paradox* database approaches *HyperCard*'s combination of usefulness and power. The leverage combines with *HyperCard*'s small-module design to make it wonderful for making custom applications. *HyperCard* is going to be the darling of power users. They will at last be able to design things just the way they want for themselves and others. You can make a basic *HyperCard* application that becomes the corporate standard,



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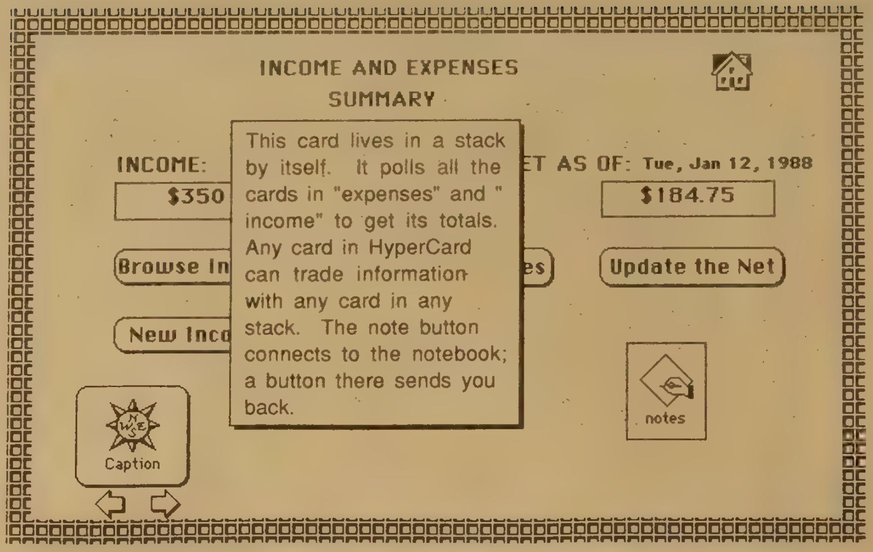
and then let each user embellish it without taking away the interchangeability. We are going to see a lot more personalized software — more than we have ever seen in the history of personal computing — because of *HyperCard*.

The sixth button on my income summary card leads off to my personal notebook. It took me several days to design the notebook, because I wanted it the way I wanted it. One of the pleasant things about most *HyperCard* applications is that your design process is iterative. You build it one way. Then you use it for a few days and decide that you want the "Next card" button on each card to be in the same place, so you don't have to move the mouse while flipping through pages. You change the stack. The change does not lose the data you have entered, and you can always change it back. This kind of flexibility leads to a quick evolution in applications.

Anyway, the sixth button is what I called a magic button. It is copied from the "front page" of the notebook stack to any card in any stack. The script of the magic button is designed to do one thing the first time it is pushed, and a very different thing thereafter. On the first push it remembers what card and what stack it has been installed upon. Then it goes to the notebook stack and creates a new blank page. It sets the "Return Whence" button on that notebook page to link (that's HyperJargon for "jump") back to the card on which it (the magic button) has been installed. It memorizes the card number of the new page in the notebook. It then jumps back to the stack where it (the button) has been installed, and rewrites its own script so that it becomes a link to the notebook page. Now if you examine the script, all you find is an instruction to jump to the notebook page when the mouse button is released. The original button script is gone from this copy, although it remains in the master "magic button" on the cover page of the notebook stack.

This was what I wanted to do with my application. It allowed me to set up links between any card anywhere and the notebook, because for me (as a writer) the notebook is pretty much the center of my collection of stacks.


INCOME AND EXPENSES SUMMARY

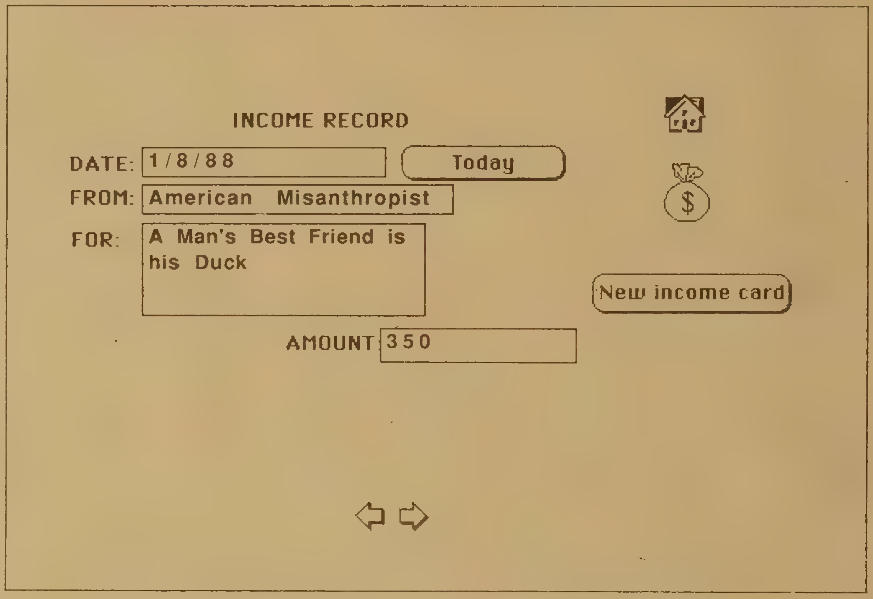
INCOME:

$350

This card lives in a stack by itself. It polls all the cards in "expenses" and " income" to get its totals. Any card in HyperCard can trade information with any stack. The note button connects to the notebook; a button there sends you back.

T AS OF: Tue, Jan 12, 1988

$184.75


INCOME RECORD

DATE: 1/8/88

FROM: American Misanthropist

FOR: A Man's Best Friend is his Duck

AMOUNT 350

You might design your *HyperCard* system differently. It would be just as possible for you as it was for me. Now where in the DOS world is there anything quite like this?

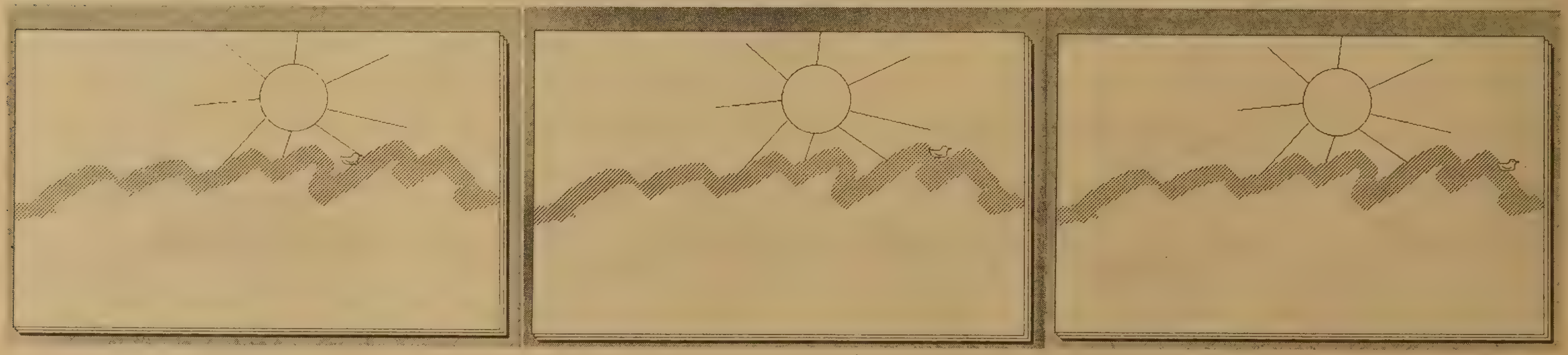
The rest of my notebook shows other features of *HyperCard*. One button stamps the date at the top of the text section. Another prints the card in report format — a button I had not debugged when the lease ran out on my Mac. Two more buttons write the text field to an ASCII file on disk or import an ASCII file to the text field. The "Return Whence" button goes to another card, if this notebook page was created with a "magic button." Otherwise it complains "Nowhere to go!" in a dialog box.

The magnifying glass reveals one of *HyperCard*'s delightful surprises. There have been a lot of complaints that the unit of information in *HyperCard* is the card. No matter how crowded that card may be, you can only get so much information on it, right? Well, no. There is a type of field called "scrolling" in the Macintosh world. You can type, apparently forever, into a scrolling-box field, and it keeps on taking the information. As with a word processor, you can see only one screenful of text at a time, but you can scroll up and down at will through the file. The magnifying glass is a toggle I installed. When it is off, the text appears only on the left side of the screen, on what appears to be lined notebook paper, while the utility buttons are accessible on the right-hand side. Toggle the magnifying-glass button and the notebook's text field becomes a scrolling box which fills both the left and right pages of the book. You have almost a full screen on which to write, and your file size seems unlimited. Another toggle, and the text field jumps back to the left side of the paper.

I decided to build a network mail system with *HyperCard*. Nothing much to it. *HyperCard* cards and stacks know how to copy themselves to other directories. Any network of Macintoshes that have shared directories can use *HyperCard* messages. This particular system looks for a directory named after the person in the first field. After you press the "send it" button in the upper right corner, it attempts to deliver the message, and if it succeeds it tells you so with a "delivered" stamp in the lower right of the card. The message proper is another scrolling-box with unlimited text-room. Time on this development: one hour, maybe less. You can send whole stacks as messages, with all their data, pictures, and built-in actions. This is a new order of usefulness in electronic mail.

There was time before Frog got its computer back to fool around with a couple of other features. I built a small shrine for St. Dismas, the patron saint of thieves and of computers. The Mac in his hand is a button. If you click on it, the Saint's advice to you appears fortune-cookie-style on the wall beside him. Another click provides different advice, because his sayings are chosen at random by the button script from a single hidden text field on this same card. You can inspect and edit the field at will. Every computer should have a shrine in it, don't you think?

The last application is scientific. It is a sort of calculator that converts the DNA code into an intermediate code used by Messenger RNA inside the cell. It can be used as is, or it could be included in a larger simulation in which different *HyperCard* stacks serve as the parts of a simulation. *HyperCard* may become best known as a simulator, in fact, be-



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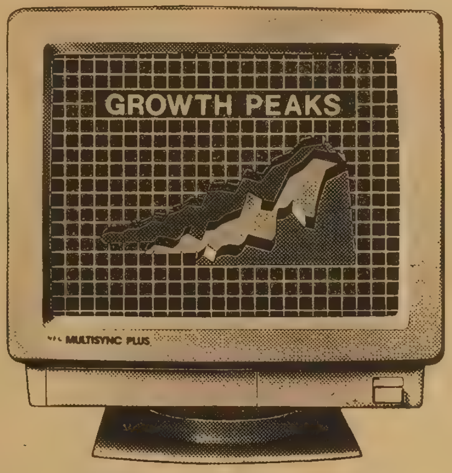

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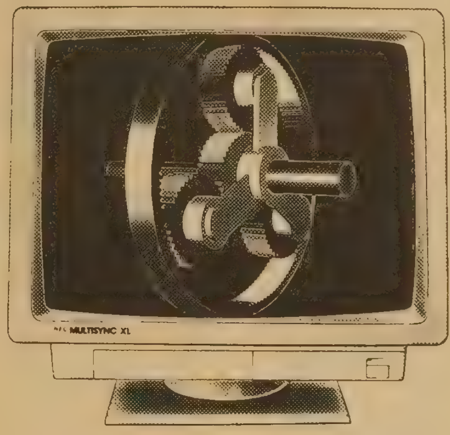

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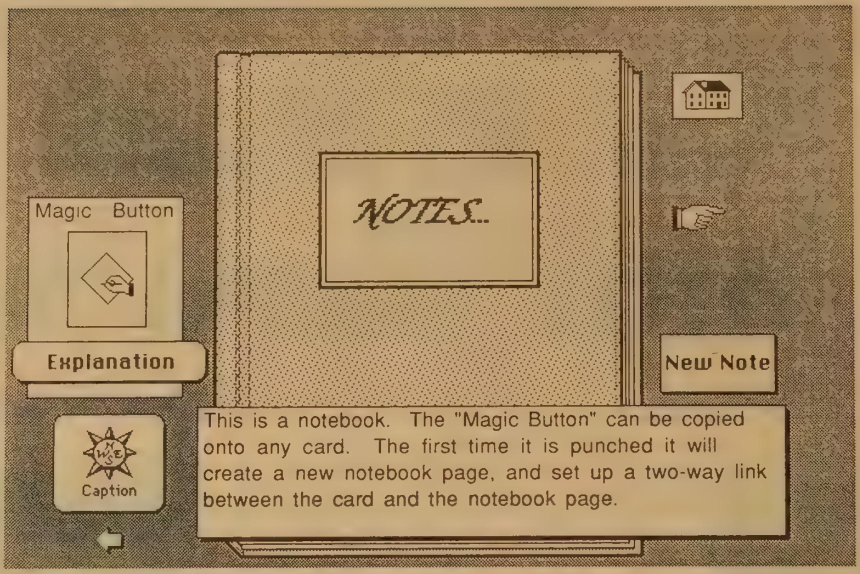
cause it makes simulations accessible to everyone. You could as easily create a simulation of the stock market as of DNA and RNA.

So — in less than eight days of spare time I developed an animation, an income and expense tracking system, a personalized writer's notebook with a linking system to connect its pages to any other card, a network mail system, a shrine with an interactive saint, and the beginnings of a scientific simulator. You, fellow DOS victim, could do the same. *HyperCard* is so good, so usable, that even visitors from another operating system can find their way around and be doing useful things right away.

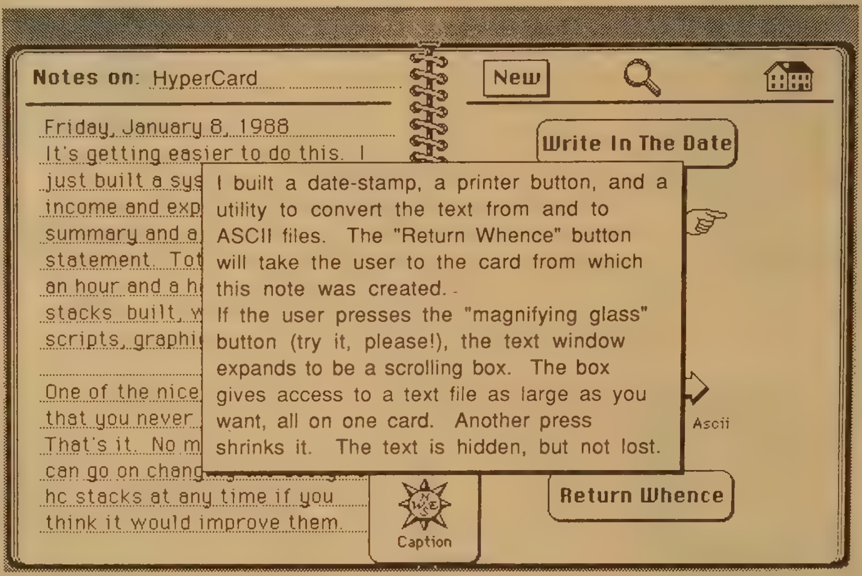
The Hypertalk Environment

There's more to it, really. Behind all this user-friendliness, Bill Atkinson and his comrades at Apple have built a very powerful new language. The *HyperCard*/Hypertalk system is actually an object-oriented programming language. In the DOS world we have Digitalk's excellent *Smalltalk/V*, reviewed some time ago in *MicroTimes* (December 1986 — No. 27). Hypertalk is incomparably more friendly than Smalltalk. Many of Hypertalk's commands are graphic and icon-driven rather than written. Only in the Macintosh do you find this kind of multi-media tool. At least, you don't find it in DOS. But the language is not simple just because it is easy to use. Fields, buttons, cards, stacks and *HyperCard* itself all have scripts attached to them that tell them how to respond to messages from you and from other objects in the system.

You can change or add to those scripts to make a very subtle system out of *HyperCard*. You can, for instance, run other programs from within the *HyperCard* environment. You have already seen that a script can rewrite itself, as did the script for my "magic button." Cards, stacks, buttons and fields can copy, change and delete themselves and each other. I have never seen such active "documents" as these *HyperCard* creatures. The analogy with living systems is unavoidable. The *HyperCard* system follows the directives of scripts just as a cell obeys the DNA and RNA within it. Each script functions as a message "handler," so you can redesign the responses of this living system, but it remains surprisingly, almost eerily, like a living being. Don't believe me on this one — try it for yourself.



This is a notebook. The "Magic Button" can be copied onto any card. The first time it is punched it will create a new notebook page, and set up a two-way link between the card and the notebook page.

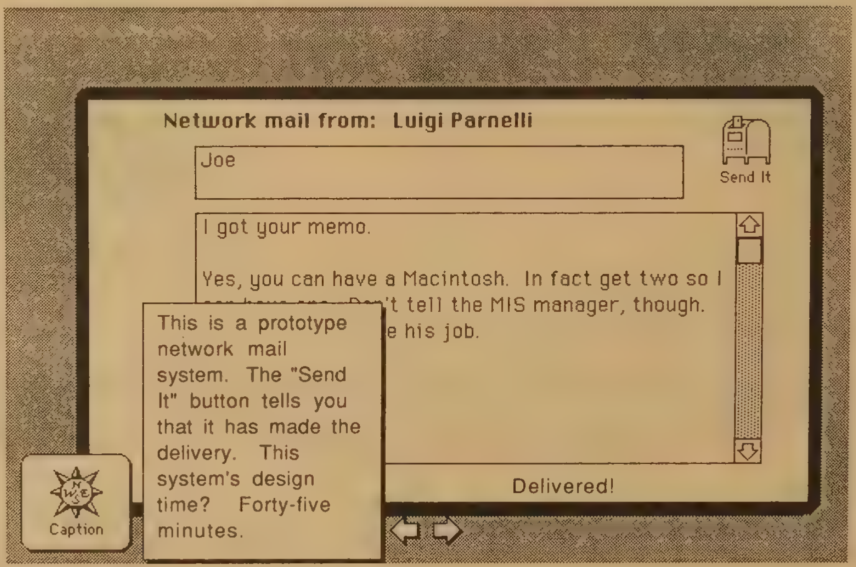


Notes on: HyperCard

Friday, January 8, 1988
It's getting easier to do this. I
just built a sys
income and exp
summary and a
statement. Tot
an hour and a h
stacks built, w
scripts, graphi

One of the nice
that you never
That's it. No m
can go on chang
hc stacks at any time if you
think it would improve them.

I built a date-stamp, a printer button, and a utility to convert the text from and to ASCII files. The "Return Whence" button will take the user to the card from which this note was created.
If the user presses the "magnifying glass" button (try it, please!), the text window expands to be a scrolling box. The box gives access to a text file as large as you want, all on one card. Another press shrinks it. The text is hidden, but not lost.



Network mail from: Luigi Parnelli

Joe

I got your memo.

Yes, you can have a Macintosh. In fact get two so I
't tell the MIS manager, though.
e his job.

Delivered!

This is a prototype network mail system. The "Send It" button tells you that it has made the delivery. This system's design time? Forty-five minutes.

All this power is available to the user along one of the most gently graded learning curves I have ever seen. *HyperCard* allows a user to remain a browser as long as she or he wishes. The system comes with a clutch of pre-built applications to explore and use. Then one day perhaps the user will make a new card; the next day, customize a background. Step by step, the user becomes comfortable with the system and gradually ventures to program. Because most scripts are short, it is easy to start. Because the Hypertalk language is like English, the syntax is sensible to a newcomer. It is not trivial, though, and an experienced user will find plenty of challenges.

I guess that answers the question we started out with. Should a DOS user get a Mac to have access to *HyperCard*? Yes, if...

- If you want to see and use a superb interface.
- If you want truly customized information systems.
- If you want to use the system that everyone else is going to imitate.

It is very useful, and very beautiful. There is nothing like it in DOS. *HyperCard* is the best thing since sliced chips. ☐

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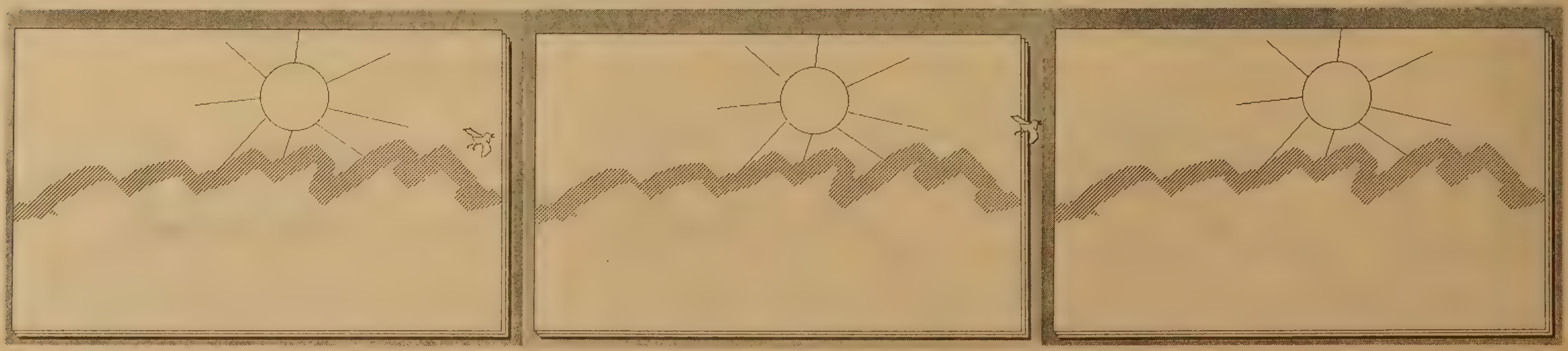
Resources:

HyperCard is bundled with all Macintoshes being sold, for free. You can buy it for $49 from any Macintosh software store. It requires one megabyte of memory and "strongly desires" a hard disk.

Danny Goodman's *Complete HyperCard Handbook* is published by Bantam Computer Books for $29.95.

Frog Computer is found at:
1102 Fifth Street
Berkeley CA 94710
(415) 525-3292



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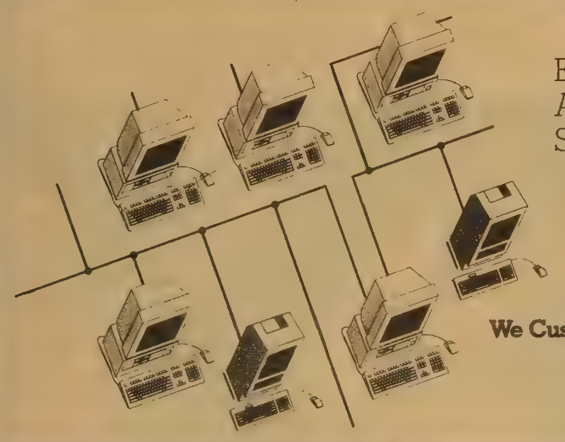

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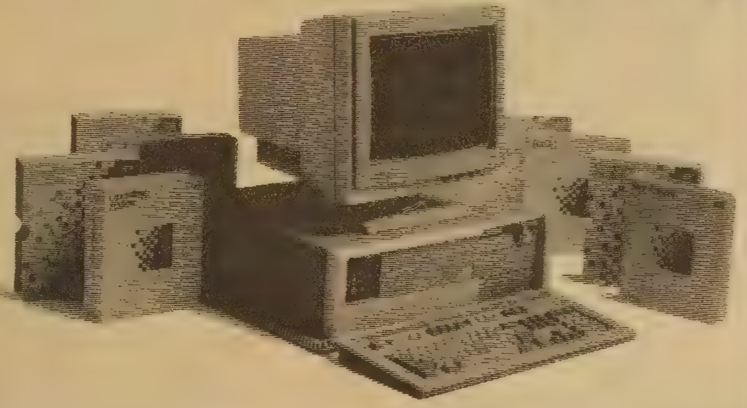

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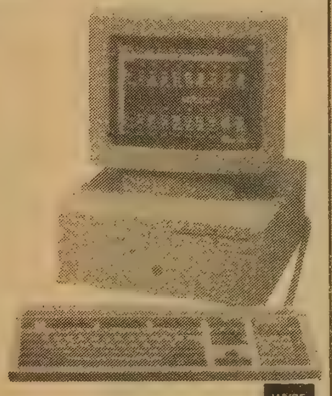

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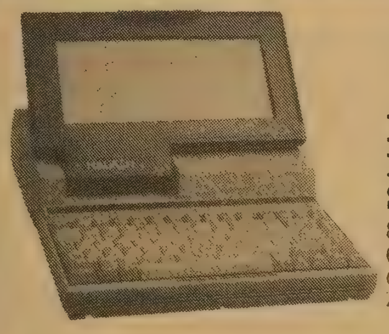

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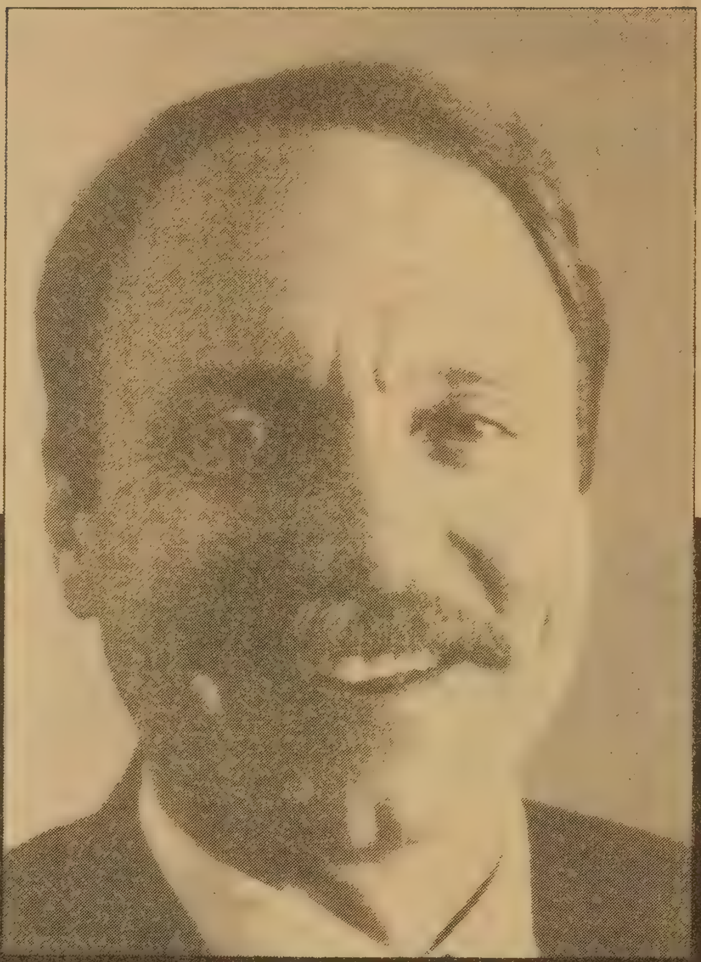

PHOTO: MARC FRANKLIN © 1988

Mark Hoffman, president of Sybase, Inc.: "I don't look at automation as being bad. I think it may actually help people understand and comprehend massive changes that are happening in the marketplace. It's what we've always been trying to do with the PC, and I think continued automation, and particularly the idea of a client-server architecture, really allows that to happen. It allows this individual out there to have a lot more power than he's ever had before."

SY

Connectivity Solutions In Data Base Management

By Mary Eisenhart

Unless you happen to work in a Fortune 500 company, or perhaps a government agency or a large financial institution, chances are you've never heard of Sybase, Inc. or its relational database product *SYBASE*. Since it shipped its first product in 1986, Sybase has operated primarily in the environment of DEC supermini VAX computers and bit-mapped workstations operating in networks, and has targeted the power-hungry online (as contrasted to decision support) applications as its chosen market.

However, connectivity being the rallying cry of the micro world these days, Sybase is emerging as a vital component in the strategies of several microcomputer-oriented movers and shakers, notably Apple Computer, Microsoft and Ashton-Tate.

Late last year, Apple announced that it was making a major equity investment in the Berkeley-based Sybase. While the contract defining the relationship between the two companies has yet to emerge in final form, the investment has already been made, putting Apple in the company of venture capitalists like Hambrecht & Quist and Kleiner Perkins Caufield & Byers in underwriting Sybase's development efforts. Connectivity being a major part of Apple's strategy to gain market share in the corporate environment, Sybase, with strong presence in both the DEC/VMS and the UNIX marketplaces, seemed a likely ally to many observers.

Then, on January 13 of this year, Microsoft made a public announcement of a long-term strategic alliance with Sybase which had begun in 1986, under which Sybase would license its SQL-based (Structured Query Language — an emerging standard in relational data base management) relational database technology to Microsoft for use in OS/2-based networks. In addition, Microsoft announced that it would license SQL Server on an OEM basis to hardware manufacturers.

At the same time, Ashton-Tate joined Microsoft in announcing SQL Server, an implementation of Sybase technology for DOS and OS/2 worksta-

BASE

tions, to be marketed by Ashton-Tate as Ashton-Tate/Microsoft SQL Server, by itself and in conjunction with future versions of *dBASE*. (The product, will be sold through the retail channel, a departure from Sybase's usual direct-sales approach, and supported by both Ashton-Tate and Sybase. Its price hasn't been announced yet, but is likely to be considerably higher than that of *dBASE* itself.)

With alliances like this added to its entrenched position in the corporate/government world, Sybase seems poised to become a major standard in connectivity.

Founded in 1984, Sybase was the brainchild of several executives at Britton Lee, a company that specializes to this day in dedicated data processing machines. Sybase president Mark Hoffman was Britton Lee's vice president of operations, and executive vice president Robert Epstein was chief architect of Britton Lee's IDM (Intelligent Database Machine), after managing the INGRES (a pioneering relational database) project at UC Berkeley. They perceived a need for the flexibility of software-based relational databases in online applications, which are characterized by the presence of dozens (or even hundreds) of users and applications accessing a large (hundreds of megabytes to multiple gigabytes) database. These high-volume applications are characterized by a need for constant updates, data integrity, security, and system availability — shutting down the system for backups, for instance, is simply a non-option.

Sybase's products — the DataServer and the DataToolset — incorporate revolutionary design features to address these needs, based on a concept called client-server architecture. The Data Server handles back-end functions of data management and integrity; the Data Toolset is a set of window-based tools for creating applications to run on either character-based or bit-mapped terminals. Sybase has been relatively selective in choosing the machines it supports (DEC under VMS, Sun workstations under UNIX, and Pyramid computers running OSx), focusing on the prevalent environments used in online applications. The company's strategy also includes connecting with IBM mainframes and minis, as well as the DOS, OS/2, and Macintosh systems.

In providing a powerful relational database based on SQL, Sybase offers the application developer a standard-based migration path. Having been endorsed by IBM, SQL is rapidly becoming an industry standard across machine lines from mainframe to micro; using Sybase's SQL-based tools, a developer could create an application for his client's currently PC-LAN-based office — in *dBASE*, for instance — and be able to transport the application to larger machines as the client's needs increased. Further, this could be accomplished transparently to the users, without burdening them with having to learning new tools and interfaces.

Interviewed at Sybase's Berkeley headquarters (the company also has numerous sales offices nationwide as well as an office in London), president Mark Hoffman offered some insights on Sybase's products and strategies, as well as their likely impact on the world of ever-more-powerful microcomputers.

Since many of Sybase's key people came from Britton Lee, can you give us some background on what Britton Lee did and how that evolved into Sybase?

Bob [Epstein] had gone to Britton Lee back in '79. He came out of the university where he worked on INGRES in the academic environment. He was brought in as the chief architect of the Britton Lee IDM.

IDM?

Intelligent Database Machine. The idea was that they wanted to download information off of bigger systems and do all of the data management functions on separate specialized hardware, which would mean that the cycles for the bigger machine would be freed up to go out and do front-end applications and that type of thing.

I think that was the first creation of the database machine. The power of that was that you could either buy smaller front ends, or you could get more people on front ends and get more cycles out of that machine, and all of the database work would be done on this back-end machine.

The problem was that it was a unique piece of hardware. You connected to a DEC or an IBM, but the database machine itself was Britton Lee, so when you went to bring that into a corporate MIS application, the guy in the computer world would choke. "Not IBM? Not DEC?" But in a lot of cases it was the only way he could solve his problem. So Britton Lee grew to a $31 million company, they did very well. It was a good idea, it was the start of our idea, I guess. They were relational, and it turned out to be a good system and got significant penetration initially.

The evolution of Sybase from that was that Bob and I decided that, in the future, what people wanted was the same type of performance of the Britton Lee IDM, but you really wanted to have that kind of performance on general-purpose hardware.

So we went off and started to look at what the computing environment would look like in 1991-92. We said, okay, we need the performance of the Britton Lee IDM, plus we need other characteristics that the online marketplace is used to, like continuous operation. That's the kind of system that we have to build.

Plus we said that in the future, looking forward five years, most of the applications would be built on extremely powerful workstations connected to networks talking to services off that network, and one of those services would be a database. And in that environment, you had to have a very clean separation between the front ends and the back

> **The idea of our front-end tools is to have a very open architecture. If the person likes the Ashton-Tate graphics package, he should be able to just call that package and bring it in and use that. If he likes Lotus 1-2-3 he should be able to use it.**

ends. In that separation there were certain things that had to happen in the front end and the back end, and so we made a list of those and built the appropriate products to address that marketplace.

Which are?

The DataToolset is the front end product and the DataServer is the back end product. I guess the biggest thing that we did is that we realized that the business rules that had been coded into applications in the past, which took up to maybe 60% of that application, couldn't be there in the future in a distributed environment. Because as you string many, many different applications on a network, all trying to talk to and access the same data, if you don't want corrupt data you've got to take those business rules and build them into the data server itself.

Could you clarify the distinction between decision support and online applications?

Decision support is very ad-hoc intensive — long retrievals, complex retrievals. You usually have a smaller number of users, five to ten users, doing ad hoc queries. The databases are usually smaller because a lot of times what you've done is taken an extract from a larger machine to put onto a machine just to analyze that data.

And also the integrity requirements are very simple, because you're doing retrievals, not updates, so you don't have to worry about corrupting the data.

That contrasts with the online segment, where it's very update intensive. You may have hundreds of users hanging off of a network, all wanting access to the data or doing updates at the same time. Databases tend to be much bigger in that environment, from hundred-megabyte to gigabyte databases.

The integrity becomes very complex, because now you have many different applications all going after that same data, and manipulating it, so it's like the maintenance person's nightmare. That's why it's so important to have the integrity brought back into the database level.

That's done by assigning different permissions to different users?

That's one level of the integrity, but the other level is the ability to actually code business rules into the database itself. What that means is that — say you're doing a automatic teller transaction. You're doing a simple "I want to take out $20." And the ATM goes away and looks at it and comes back and says it's fine.

But now you've got all these ATMs all over the country that want to have access to this common data. So what happens if that person's out of cash? What do you do in that case? So somebody comes with this great idea of a VISA card and says, "Now you want to build in this rule that says, gee, if this person doesn't have cash in his account but he has a VISA card, then go ahead and issue him the cash and charge it against his VISA card." You can take that whole rule and put it into the data server itself, which the ATMs are talking to.

In a normal situation, without integrity in the database, the ATM would have to have that logic stored in it, and then every ATM or every access to that data would have to have that same logic in it. So if you ever wanted to change it to say something else — "now let's see if he has a VISA card *and* a MasterCard" — you have to go back and change each one. What we're saying is, take that same logic, put it into the database itself, so that if you ever want to change that logic you go to one place and make the change there, and it's effective immediately to everything that's trying to access that data.

Because a networking environment is much more complex, as you start to tie together all these PCs.

In a microcomputer-based setting, is it more typical for users to take the data from a server, manipulate it on the PC, and then send it back to the server, or is it more a process of constant interaction?

It depends on what they're doing. You may simply bring data up to the microcomputer, and you may work with that set of data for a long period of time before you get to another transaction with the server. I think the interaction with the server is fairly short, fast transactions, and more manipulation going on back here.

What's the relation between SQL-Server and Sybase's Data Server?

They will be compatible products. They'll be identical in the kernel, the basic product. The sense that you have different operating system issues, and different networking issues, is really the only differentiation.

SQL-Server is a much more powerful and expensive product than dBASE itself. Who among the people who are using dBASE or working with it as a development platform is a likely candidate for SQL-Server?

I think people that have programmed in *dBASE* and find that their application's running out of power, and they want to move on to something else but don't want to totally rewrite the application. They want to preserve their investment in *dBASE* and want the additional power of the SQL-Server.

You can do all this in a micro-only environment?

Sure.

How powerful would the micros have to be to meaningfully run this?

On the server side you really need the PS/2. You need something with two megabytes of memory and running the 386. The front end, you can use DOS and 286es.

What about on the Macintosh end? Are you going to have an A/UX version of the server?

The real problem with Apple, even for this interview, is that the contract has not been signed with Apple. The equity investment has been made, but the details of exactly what systems, what networks we will support — we're still trying to get that closed down.

I have the impression, particularly in the wake of the DEC announcement, that they'd be more interested in VMS connectivity than UNIX.

Well, we also didn't know about that [the DEC announcement]. What we talked about at the time of the investment was just that we both shared the same vision of the future, and we weren't specific about talking about anything like VMS and what we would connect to, or even if we'd run under UNIX or the Apple operating system. All of those were vague. (laughs)

More or less a commitment to the workgroup idea of individuals working on projects in groups?

That's the idea of the SQL-Server; you really have department-level people able to interact, from the PC level now.

What's the importance of SQL?

I think the importance of SQL is that IBM is establishing it as a standard, and it's now become the standard in the industry. So anybody that doesn't have SQL, they're not going to have a relational database, or they will not survive in the future. You *have* to endorse SQL. That's why it's so critical to us.

But if you look at the vendors who endorse it — Oracle supports SQL, RTI (Relational Technology, Inc., which markets INGRES) now supports it, Informix supports SQL. And then there's the older-line vendors, that used to be in the database area, like Cullinet, Applied Data, Syncom. They were not relational databases, nor did they support SQL. They have now announced that they're moving to supporting SQL. If they don't they're going to disappear totally.

The difference is really — again, you go back to this. Oracle and RTI are relational and SQL, but they don't have enough power, they don't have enough features to play in the online segment of the marketplace. They do have certain lighter online applications that they're able to support, but once you get into the mainline online applications, or the heavier online applications, you won't see any of the INGRES or Oracle product.

From the practical standpoint of the client who's got to get a job done, and the users who are doing it, what are the advantages of SQL versus non-SQL?

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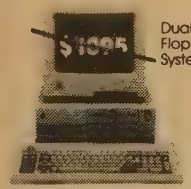

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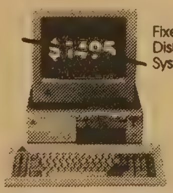

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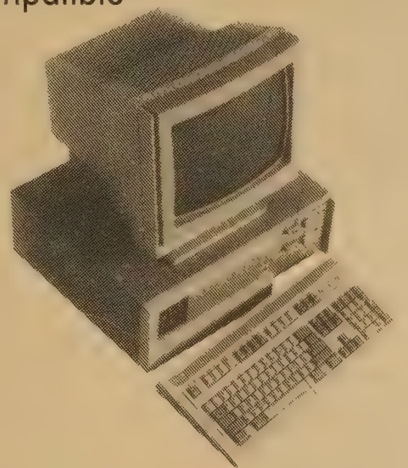

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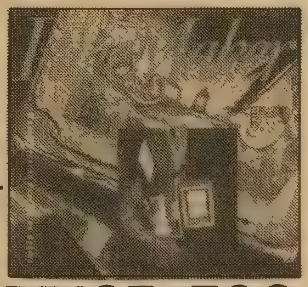

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The strongest idea for the application developer, if he uses SQL as the common language, is that he can preserve his investment in applications. So if he wants to change the engine somewhere along the line, he can either move up to the next higher platform or go to a totally different environment. So in the heterogeneous environment that people are moving to more and more, where they have mixed machines doing different applications and you want to move applications between those machines, SQL is a good way to do it.

The power to the end user in the micro world, as I see it, is the ability to build stronger and stronger applications. Having this common language to preserve — everybody's application grows once they build it, and you always underestimate where it's going to end up, so it outgrows the machine and you have to rewrite it, which means more capital investment. Now you're starting to be provided with a migration path to more powerful machines.

The other thing I think it's going to do — if you have the SQL Server as a standard on the back end, it's going to focus people on building better and better front end tools, which in the long run will lead to people being able to build applications in a much simpler fashion. I believe that the competition in the future will center around the tools, not so much around the back end. You're going to have all the big players — Lotus, Ashton-Tate, Microsoft — developing really fantastic end-user front-end tools to build applications with. Apple and its object-oriented programming — we'll probably start to see some of it this year, more of it in '89, and by 1990 you'll have incredibly powerful tools out there. But the reason you'll have those powerful tools is that you'll have the SQL Server.

So in a sense maybe you've come around full circle to the Britton Lee idea of offloading this front end processor to do the real work it's supposed to be doing.

Apple's investment in Sybase makes sense in the light of the DEC/Apple alliance, since you're very prominent in the DEC world, but what's behind it from your perspective?

Well, I think Apple needs to have a database — I guess I'd call it a serious database — that can handle other than smaller applications, and they didn't really have one running on the Apple [Macintosh]. They looked around at lots of technology and decided that Sybase had the best technology and that our view of future computing environments was similar.

Are they primarily interested in your front-end or back-end products?

They're interested in both, actually. They'd like to see our DataToolset, or the connections from the Macintosh to the server, or the server being a Macintosh. It [the Macintosh II] certainly is as powerful — it's a 68020, the same as the Suns, so it's got significant power.

You've been pretty selective about what machines your product runs on. What was your thinking on that?

We have a real clear vision of the online segment of the marketplace, and that's what we're going after. If you really focus on the online segment, within that there's eight to ten platforms that you have to run on to totally dominate that segment of the marketplace. So we've been real careful in the platforms we pick — how they fit into that array. If you look at our end user sales, they're VAX and Sun, but Sun only goes up to a 10 MIPS (Million Instructions Per Second) machine, so you say how do you get from 10 MIP to 100 MIP? Pyramid is a UNIX platform that takes you from 10- to 100 MIP machines in a multiuser configuration.

And then you've got the high end of the market, which is MVS and VM, the IBM mainframe systems, which we will have a solution on, not in '88 but probably in '89.

But then on the low end, given this vision of client-server architecture, you have to have the solution of personal computers and workstations connected there as the client, and that's what we really saw in the Apple and the Microsoft/Ashton-Tate end of the business.

But again, it's all focused on that segment: how do you optimize the Sybase solution in that particular segment of the marketplace?

As a totally speculative question, do you see the server as a backend for hypertext applications? HyperCard in particular, because it's got the huge installed base, but others as well.

I think that's the logical way to go. Again, if you really want to use *HyperCard* in a complex application where you have huge amounts of data, you've got to have some simple way to manipulate and organize that data. And the SQL Server is going to do that.

The SQL Server is independent of what the user sees?

Absolutely.

And it's up to the application designer to put the interface and links together and make them work smoothly?

He basically has to build his application, and his application has to talk to this piece of software we call Database Library. Once he's made that connection, his application is talking to our SQL Server. So it's a very simple connection — it's not a complex environment to work with. And with Ashton-Tate and Microsoft and Apple involved, it's going to be established as a major standard.

We're building a fourth-generation language where you will be able to build applications much in the Macintosh fashion, where you have menus and just pick and choose options in putting your application together. All programming will turn out to be where you're really not writing any more in a language like FORTRAN or COBOL, but it's more of the object-oriented idea where you're picking and choosing options. Ninety-five percent of the applications will be able to be built in that fashion. Perhaps the other 5% you'll have to go out to some programming language to do more complex things. And I believe even that is only in the short run. It's all going to happen.

Sybase front ends will run on Apple [Macintoshes], and they will run on top of OS/2 and DOS. So there is that alternative, past *dBASE* or anything else. Sybase will have its own tools out there. People that want to go across multiple platform may say "Gee, Sybase spans OS/2, spans DEC, spans Sun, spans Stratus, so if I build my application with Sybase tools, I can migrate to any of those platforms, essentially transparently." So I think we'll have our own strong set of tools out there.

But we're not going to go into word processing or graphics or any of that. The idea of our front end tools is to have a very open architecture. If the person likes the Ashton-Tate graphics package, he should be able to just call that package and bring it in and use that. If he likes *Lotus 1-2-3* he should be able to use it. So our idea is an open architecture where we provide a report writer and kind of the basic part of the platform, but for all these others we'll have this open architecture where you can go out and use all these tools, and use the one that you like to use.

I think it's a long way off, but people will really be able to describe an application from the user level, and then go back and generate the database and the application code and everything else from that level.

There was sort of a flurry of application generators in the micro world a while back, and people tended to find that they weren't nearly as toaster-like as they were supposed to be.

Well, the tools weren't there. The thing that's happened today that didn't allow you to do this a couple of years ago is workstations, 2- to probably 10 MIP workstations, sitting on desks with bit-mapped terminals and unlimited RAM and access to big disks, and available for very reasonable amounts of money, under $2–10,000. That's going to be incredible power.

What do you see as the interesting directions in the micro world?

Things like Lotus's connection to Oracle, where you now have the ability to go out and build bigger and bigger spreadsheets, more power. That's going to start to happen in every application in the micro world, particularly in the corporate environment.

In that corporate environment, where people have got all these PCs — they're really kind of halfway tied together, they're able to exchange some information from PC to PC, but it's just not efficient. Now I think you're starting to get vehicles to be very efficient in that networked environment, and one of them is the Data Server. Some of it is shared print resources — all of those things are starting to happen.

Now you've got to tie those PC spreadsheets, graphics, word processing, all into some common database. What happens when you have two or three PCs able to work on a document at the same time — people are now going to have to modify these word processing packages to work in that environment. There are some multiuser-on-a-single-PC packages, but now as you start to go to different PCs talking to some sort of a common database, how do you work in that environment?

There's no limit to the number of servers you can hang off of a single network, just as there's no limit to the number of front ends that you can hang off that network. If you look at these environments as they're starting to develop — each one of those micros could have a database on it, so you might do a lot of work just with the database that's on that particular micro. You could be working with *dBASE* just as a single-user standalone program on that system, plus you could work with *dBASE* talking to the Sybase server as a more powerful server, or to other servers hanging off of that network. And neither the front ends or the back ends are limited, so you can add pieces of that architecture as you see fit. That gives the MIS person — or the person at department level — a lot more flexibility than he's ever had.

How many users do you need on a net to take proper advantage of this? When is the Sybase server overkill?

I think it starts at two. Because if the application is the right application, money may not be the constraint. Particularly in the banking applica-

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tions, where Sun is a pretty expensive single-user platform — but if you've got an analyst sitting there who's making millions of dollars' worth of decisions and has to make them on a real-time basis, a Sun workstation is cheap. Or a $10-12,000 386 or PS/2 platform, or an expensive Sybase solution. It's probably a very good investment.

What kinds of applications is it being used in currently?

We have four segments of the market that we're targeting: financial and banking, telecommunications, manufacturing, and the government segments.

The biggest penetration that we've had to date is in the financial segments — trading applications, things where they're making decisions on loans, which in the banking industry are called platform applications. In the telecommunications area, it runs everywhere from switching situations to analyzing Yellow Pages or white pages. In the CIM area, Computer Integrated Manufacturing, it's applications such as board assembly and manufacturing and tracking, customer support tracking, and testing applications. Then there are a whole series of just general miscellaneous applications.

What's the most unusual thing SYBASE is being used for?

Kind of outside of all those target markets, it's being used at Johns Hopkins Hospital as a patient record application, where you have all of the patients' records being stored in a central location, so that a doctor goes up to a patient's room, and he could type into a terminal that's located in that area, call up the most recent patient records and be able to see what medication was given in the last couple of minutes without waiting for some sort of an update to be processed. Or if he in fact does [give] medication, he could enter something there saying "I did the following treatments," and that would be online immediately and available to everybody else in the hospital. I think that's a fairly unique application.

Let me give you a couple of other applications. Say you look it on a trading basis.

Stock trading?

Stock trading. Here's an analyst that wants to have access to all the most recent stock information — what were the last trades — and have them displayed on his screen on a real-time basis, so that if that stock changes, there's an immediate reflection on his screen. He may even be doing some analysis of that family of stock that could be immediately reflected on his screen on a real-time basis.

So it was Sybase that caused the crash, huh?

(laughs) No.

The amazing thing is that the crash really hasn't affected our sales into that marketplace. In fact I think that people have the sense that they have to have a better handle on the data. What part of the problem was with the crash, I think, is that it was so massive and so many things were going on that you couldn't get your arms around the problems. What that said is that you may not need less automation, you really need more, because the problems have become even more complex today than they were two or three years ago. There's just more data there that an analyst has to get his hands around — you can't just throw it down on the floor and make gut decisions any longer. You've got to have some way to understand the data.

I don't look at automation as being bad. I think it may actually help control — not control in the sense of control, but just helping people understand and comprehend massive changes that are happening in the marketplace. It's this whole idea of getting power back into the hands of the individual, and his ability to handle, understand, manipulate and comprehend data. It's what we've always been trying to do with the PC, and I think this continued automation, and particularly this idea of a client-server architecture, really allows that to happen. It allows this individual out there to have a lot more power than he's ever had before.

Are there any things you'd like to see the technology do that it can't yet? Any directions you'd like to see it move in?

I think the biggest direction is, again, to the front-end tools. To see dramatic productivity enhancements on the front-end tools, because that's been the bottleneck for developing applications, and I think it continues to be. So the more things we can do for productivity on the application development side, I think, the more progress we'll see in computing in general.

I think it'll happen and it'll happen fast. More importantly, too, I think that all of these things will be transportable across different environments, and that also will lead to tremendous productivity leaps.

I think, too, you can look at what people are implementing on Sun workstations today, and that's what people are going to be implementing on PCs tomorrow. And tomorrow is not very far off. (laughs) It's the end of this year. (Sybase, Inc., 2910 Seventh Street, Berkeley, CA 94710, 415/548-4500) ☐

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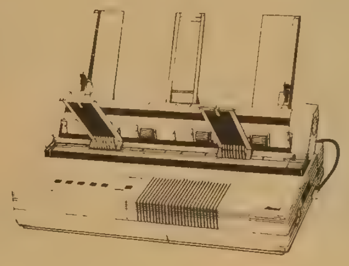

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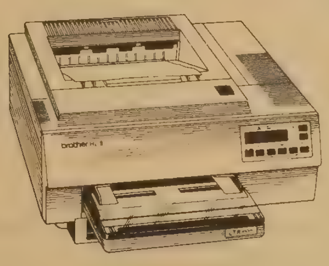

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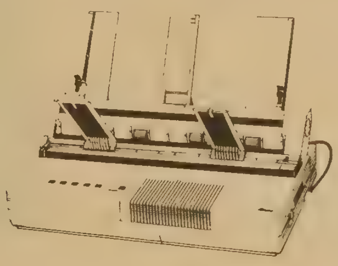

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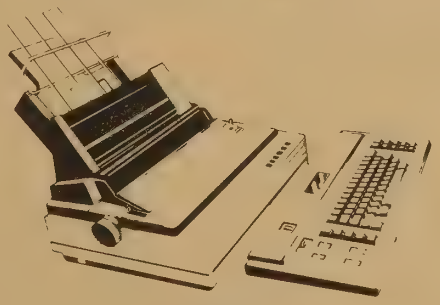

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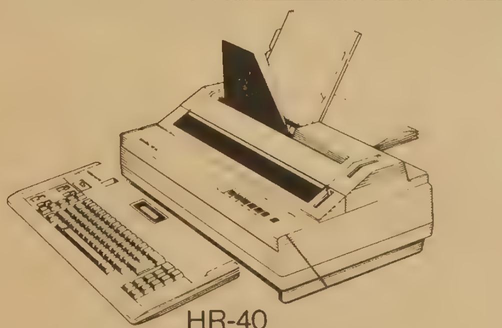

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Windows 2.03, Or

When Is A Presentation Manager Not OS/2?

By Robert Beauchamp

The major advantage of *Windows* from Microsoft has been its capability of running more than one program simultaneously. The ability to move quickly from one program to another, and take information from one application and put it in another, has appealed to enough people to make *Windows* a major force in the software market.

In *Windows 2.03* Microsoft has included another feature that has also become a major force in the computer world: the graphical interface.

Known as the Presentation Manager, this graphical interface is the same as that found in *Windows 386* and similar to that in Microsoft's new operating system OS/2. With the Presentation Manager, users of MS-DOS machines can experience the joy of cutting and pasting graphics into word processors, pulling down menus with a mouse and double clicking icons to make them blossom into full screen spreadsheets.

With the introduction of a graphical interface, comparisons of *Windows 2.03* with the now famous Macintosh desktop it was designed to emulate are inevitable. What has developed is an interesting situation where, with *Windows*, Microsoft is trying to corral applications into a standard interface that the Mac has so long enjoyed. The questions that *Windows 2.03* raises are these: does the Presentation Manager succeed, and how well does it work with programs that don't or won't subscribe to this interface?

Installation

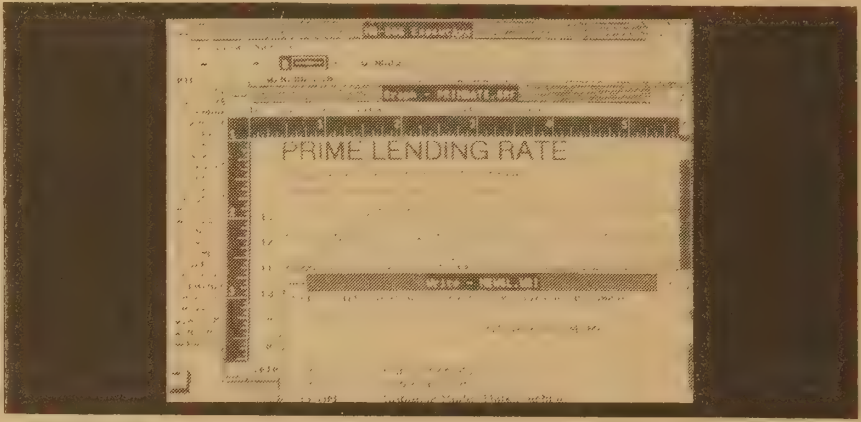
As with all new Microsoft products for the PC, setting up *Windows* is as easy as it can be. *Windows* never cops out, asking you to "please refer to your DOS manual...". With *Windows* you put the setup disk in your A: drive, and type setup. This calls up the setup program, which walks you through the process asking questions about your computer, display and printer. It then prompts you to place the appropriate disk in the drive. All you do for the most part is press return.

There are three major considerations in evaluating *Windows*. The first is its ability to run more than one application at once. The second is the handful of programs that are included in *Windows* and specifically designed to take advantage of the graphical interface. The third is all the other programs out there and what it takes for them to run successfully with *Windows*.

New Features

The same set of conditions necessary to easily run more than one application with the old *Windows* still apply with *Windows 2.03*. You need a lot of memory, at least 640K, and a hard drive. The more memory you have, the better *Windows* runs. It is also still true that the more applications you try to run at one time the slower each individual application runs. In these days of monster business applications, don't be surprised if you can't get more than two of your favorite applications to run at the same time.

However, *Windows* now supports expanded memory and extended memory. Included in *Windows 2.03* is the disk caching program *SMARTDrive*. Using this program makes *Windows* run much faster for those who are willing and able to get their machines upgraded to one megabyte of RAM and beyond.



Windows 2.03 from Microsoft employs a graphical interface that allows you to run several applications in overlapping windows. It also allows cutting and pasting of information from one application to another.

One thing that the old *Windows* didn't require that the new one does is EGA or VGA graphics capabilities. This makes sense considering the graphical interface. However, it certainly ups the ante as far as hardware purchases. If the Presentation Manager is to be the new standard, whether in *Windows 2.03*, *Windows 386* or OS/2, this means that expensive VGA or and EGA graphics will also be considered "standard equipment."

Another feature *Windows 2.03* offers is mouse support. While Microsoft was careful to include easy keyboard commands for all the functions of *Windows*, everything goes much more smoothly with a mouse. Graphical interfaces simply work more efficiently with a mouse, completing such tasks as sizing windows and and pulling down menus in a fraction of the time. An employer can easily justify the cost of a mouse by the time a worker saves not having to learn keyboard commands.

Another advantage the graphical interface provides over the old *Windows* is the ability to have overlapping windows. Rather than splitting the screen into ever-smaller spaces, the Presentation Manager provides workspaces that overlap and can be easily made into any size you wish. With one click of the mouse, a window can be made to either fill the screen, or shrink to an icon in the corner. It can also be sized by clicking on the corner or border of a window and dragging, filling as much of the screen as you desire. Windows and icons can also be moved around and placed anywhere on the screen.

Applications And Windows

Windows 2.03 comes with a variety of programs that are specifically designed to be used in the Presentation Manager. They include *Windows Write*, a word processing program, *Windows Paint*, a paint program, and seven desk accessories that include a notepad, clock, calendar, cardfile and a calculator. While using these programs you realize that *Microsoft Windows 2.03* is more than just a tool to run more than one application simultaneously, it is a new way of looking at your MS-DOS machine.

Windows Write is a graphically based word processor that lets the PC user cut and paste graphics into a *Windows Write* document, display different type styles and sizes on the screen, and select sections of text and move them around the document with a mouse. As far as its word processing abilities, it is simple and stripped of any of the more involved features one would expect of a *Word* or *MultiMate*. It is especially useful for writing short documents or fliers that require graphics. It is also useful to those who have no desire to learn a complex word processor and can do without advanced features such as mailmerge or spelling checkers.

Windows Paint is also a stripped-down version of its more complex cousins. Its tools include the requisite paint brush, pencil, eraser, spray paint, line and shape tools, and patterns. It also includes a few features only found in high-end illustrators, such as a curve tool and a three dimensional object tool. It does not, however, include color like many other paint programs for the PC.

What makes the Presentation Manager work its magic is the feature known as the clipboard. When you cut a graphic from *Paint*, or a paragraph from *Write* it is stored in the clipboard. When you are in another program that features cut and paste, you can then paste the material from the clipboard onto the page. While this is old news for Macintosh users, the advantage of the Presentation Manager is that, since more than one program is running at one time, you do not have to go through the time-consuming process of exiting a program, converting the material into a different format, and then entering the new one in which you wish to paste your material. You simply move to another window and paste.

The programs provided with *Windows 2.03* work well together. Along with these applications there is also a group of programs from Microsoft that work especially well with *Windows*, most notably *Word*, *Chart* and *Excel* for the PC. Almost everyone, however, will also want to use a vast array of products that were designed without consideration of the graphical interface of *Windows* — or even designed before there was a *Windows* to consider.

Windows And "Standard" Applications

The key to using these "standard" applications, as they are called in the

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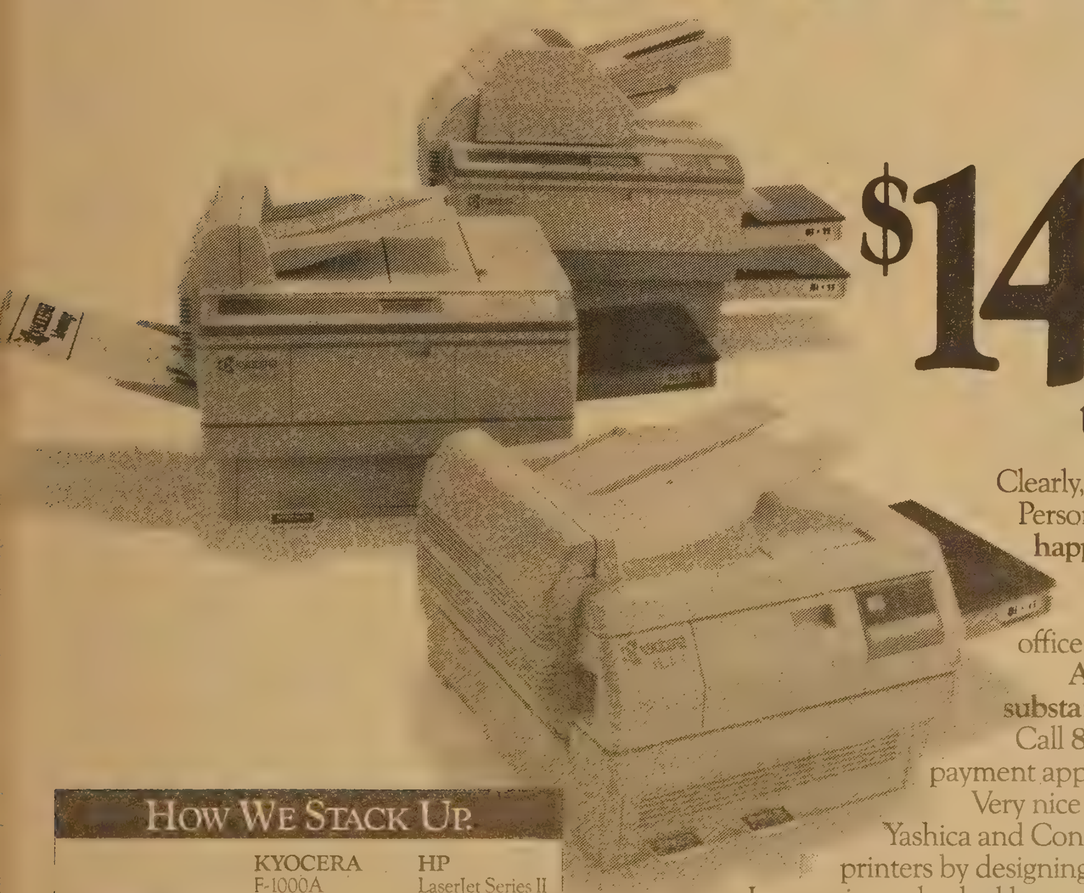

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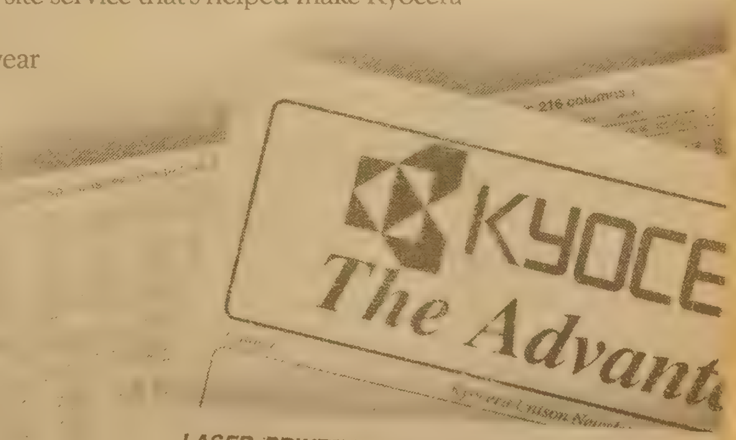

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RATING

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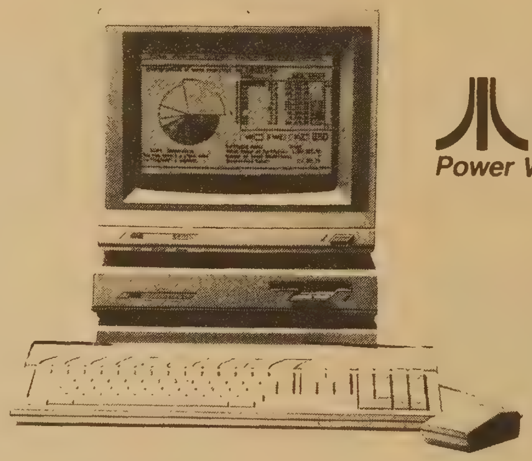

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Windows documentation, is the PIF file. PIF stands for Program Information File. It exists to tell *Windows* how to run a standard application in the most efficient manner possible.

Microsoft programs such as *Word*, *Chart*, and *Excel* already have PIF files built into them. Extremely popular programs such as *Lotus 1-2-3*, *dBASE*, *R:BASE* and *BASIC* have PIF files provided for them in *Windows* itself. When you start one of these programs from *Windows* for the first time, *Windows* automatically puts the PIF file into the program's directory.

For those standard applications that do not have PIF files provided, you must use the PIF editor to make one. This is the most inconvenient and intimidating aspect of *Windows*.

The PIF editor asks you questions about your application that you probably never thought about. You must tell the editor the exact DOS designation of your program — i.e. MM.EXE for *MultiMate* and PVRMAIN.COM for *Patton vs. Rommel*. You must also include the subdirectory in which it is contained. The entry for *Patton vs. Rommel* would be /PVR/PVRMAIN.EXE. While this seems to be no problem for a person used to DOS, it becomes inconvenient when you have to do it for all the files with .EXE, .COM and .BAT extensions in an application. *MultiMate Advantage II* has *twelve* of them.

Another factor you have to consider is how much memory you wish to allocate to a program. The PIF editor asks you two questions in this regard, the minimum amount of RAM required to run the program and the actual amount you wish to allocate for that program. The default setting in the PIF editor in each of these categories is 52KB. If your program requires more than 52KB, then you are going to have to change these settings. If you enter 0 into the desired memory box, *Windows* will give that application all available memory. Later, when running the program, if there is not enough memory to run your application *Windows* will tell you so. You will then have to go back and close some other applications in order to free up some RAM.

Possibly the best strategy is to enter −1 into the memory desired box. This will give all RAM to your application and swap *Windows* onto the hard disk. This means, of course, that your program will not be running in a window. It is easy to get back into *Windows*, however, by pressing ALT + ESC.

It is also important to consider whether your application can run in a *Windows* window at all. Some programs must run "full screen" and are not compatible with the Presentation Manager interface. You might not feel so bad about swapping *Windows* to the hard disk if your application couldn't run in a window in the first place.

The only way you are going to be able to make all these decisions is through trial and error — adjusting memory, testing whether a program will run in a window and running applications together in different combinations to see whether there is enough memory to run them simultaneously.

The major advantage, then, of creating a PIF file for a standard application (provided you don't swap windows to the hard disk) is that you eliminate the need to exit a program before working in a new one. When you press ALT + ESC your program is shrunk to an icon on the screen, which you can call up at any time.

Remember, saying that a program will not run *in* a window is not the same thing as saying a program will not run *with* Windows. A program running "full screen" can still take advantage of *Windows*. You will still be able to cut material from an *Excel* document and paste it in a *Microsoft Word* document, even though *Excel* is running in a window and *Word* is running full screen.

One of the things that seems to be causing the most anxiety about the new Presentation Manager is the issue of what the application will look like on the screen. The Presentation Manager can't make a program look like anything it doesn't want to. It would be a matter of changing a text-based interface into a graphical one (and all those out there who have been trying to get their PCs and Macs to talk to one another know how difficult that one is.)

A program like *Windows Write* will of course have the Presentation Manager look to it. A program like *Excel* for the PC not only looks like the Presentation Manager but actually needs *Windows* to run at all. A program like *Microsoft Word* runs full screen and looks like it always did, as will any application running full screen. As a matter of fact, unless your application includes instructions for use with *Windows*, IBM *TopView* or an ANSI device driver chances are it won't run "in" a window.

Conclusions

Ever since the introduction of the Macintosh, the graphical interface has sparked excitement in the computer world. Ever since the introduction of *Windows* the dream of multitasking has also spurred development and change. It is interesting to note that Apple is trying to manage multitasking on the Mac with *MultiFinder*, which is still not as efficient as *Windows* on DOS machines. With the Presentation Manager, Microsoft is trying to add the ease of use inherent in the graphical interface to the DOS world. While *Windows 2.03* goes a long way in achieving this, it also has a tough time meeting both goals efficiently. In the future we can expect the best of both worlds on one machine. For now, however, we'll just have to put up with a few inconveniences. ☐

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System Requirements: IBM PS/2 model 50 or 60 with IBM PS/2 80286 Memory Expansion Option board or compatible. Note: IBM PS/2 architecture requires disabling motherboard memory and 'backfilling' conventional memory to 1 MB in order for any multitasking environment to work, including Microsoft Windows 2.0, IBM's 3270 workstation program, or DESQview. QEMM will not run on 80286 computers with extended memory.

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PageMaker 1.0a For The PC

By David Garfinkel

Many people see *PageMaker* 1.0a for the PC as a magazine and newsletter design and production program. And it certainly can be used for that.

But most of what the majority of us read and write most of the time is not of the "publication" category. It's more like, well, *workaday* documents: memos, letters, proposals, reports and forms.

I think it's unfair and unrealistic to expect any single program to fundamentally change who we are or what we do. So we'll look at this version of the highly successful Macintosh program both from a proffered *publications* point of view, as well as from a more familiar workaday (memos — reports — proposals) perspective.

Remember how much time and effort you put into writing that last speech or article for your industry's professional publication? What were your thoughts as the right words slipped out of your hands like so many gobs of jello? How much easier do you *really* think it will be to formulate, write, and edit your own newsletter or magazine?

Yet proposals to clients, memos to management and letters to prospects will go on. And face it — most of them look dull, drab, ordinary. Or they get sent out to printers who are often backlogged or inconvenient.

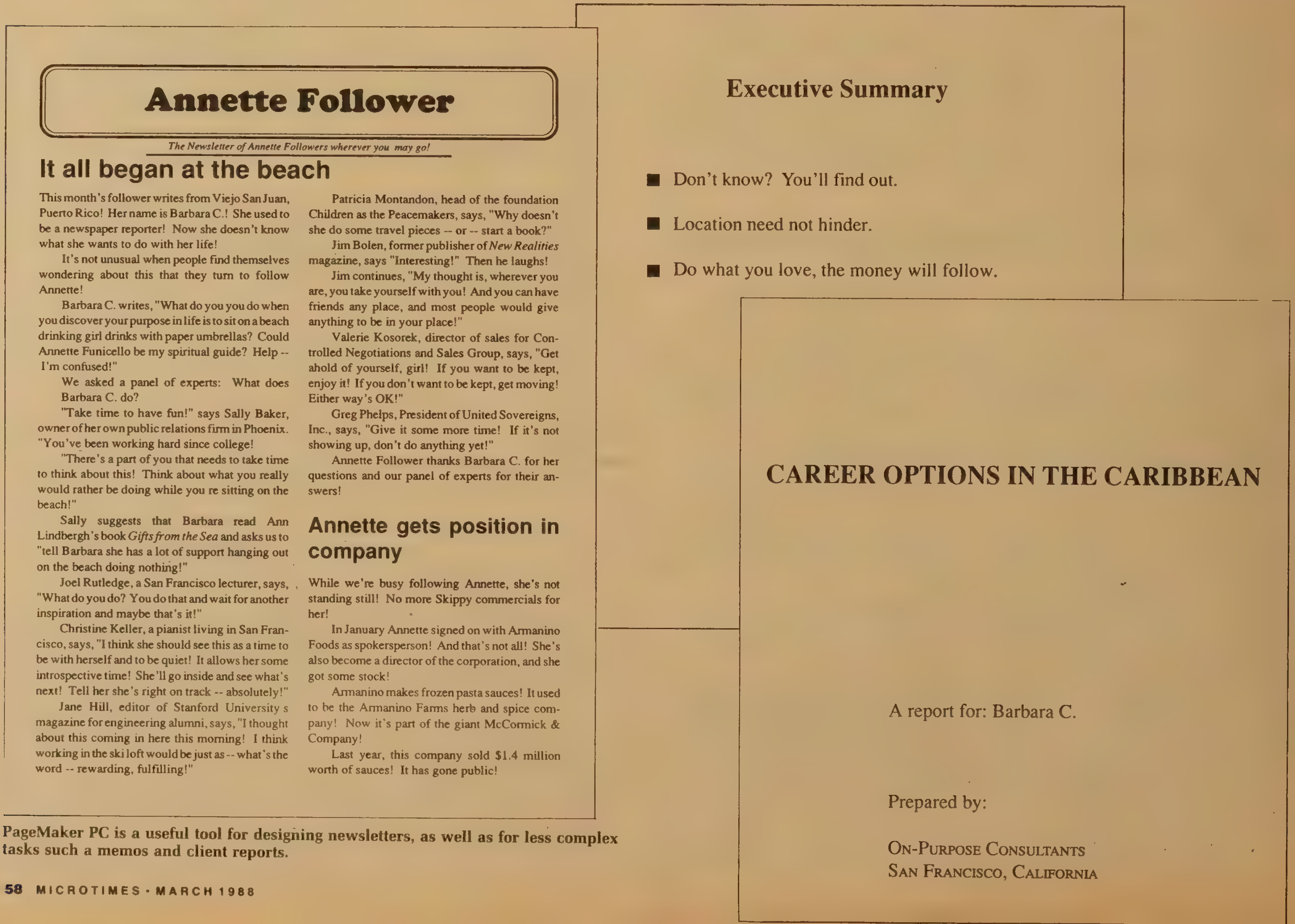
So let's consider the question (as many market-savvy users of *PageMaker* and other desktop publishing programs already have): How do my new-found publishing powers fit into *my* life?

And, specifically, what other good use might I put *PageMaker* to — if any at all?

> **I learned the basics of PageMaker in a couple of hours, and, with outside help, completed the first page of the newsletter and the first two pages of the research report in less than eight hours total. It took me well over 30 hours just to get the gist of Ventura Publisher.**

The Report Scenario

We begin by mocking up a typical scenario — a research firm gets a



Annette Follower

The Newsletter of Annette Followers wherever you may go!

It all began at the beach

This month's follower writes from Viejo San Juan, Puerto Rico! Her name is Barbara C.! She used to be a newspaper reporter! Now she doesn't know what she wants to do with her life!

It's not unusual when people find themselves wondering about this that they turn to follow Annette!

Barbara C. writes, "What do you you do when you discover your purpose in life is to sit on a beach drinking girl drinks with paper umbrellas? Could Annette Funicello be my spiritual guide? Help -- I'm confused!"

We asked a panel of experts: What does Barbara C. do?

"Take time to have fun!" says Sally Baker, owner of her own public relations firm in Phoenix. "You've been working hard since college!

"There's a part of you that needs to take time to think about this! Think about what you really would rather be doing while you re sitting on the beach!"

Sally suggests that Barbara read Ann Lindbergh's book *Gifts from the Sea* and asks us to "tell Barbara she has a lot of support hanging out on the beach doing nothing!"

Joel Rutledge, a San Francisco lecturer, says, "What do you do? You do that and wait for another inspiration and maybe that's it!"

Christine Keller, a pianist living in San Francisco, says, "I think she should see this as a time to be with herself and to be quiet! It allows her some introspective time! She'll go inside and see what's next! Tell her she's right on track -- absolutely!"

Jane Hill, editor of Stanford University s magazine for engineering alumni, says, "I thought about this coming in here this morning! I think working in the ski loft would be just as -- what's the word -- rewarding, fulfilling!"

Patricia Montandon, head of the foundation Children as the Peacemakers, says, "Why doesn't she do some travel pieces -- or -- start a book?"

Jim Bolen, former publisher of *New Realities* magazine, says "Interesting!" Then he laughs!

Jim continues, "My thought is, wherever you are, you take yourself with you! And you can have friends any place, and most people would give anything to be in your place!"

Valerie Kosorek, director of sales for Controlled Negotiations and Sales Group, says, "Get ahold of yourself, girl! If you want to be kept, enjoy it! If you don't want to be kept, get moving! Either way's OK!"

Greg Phelps, President of United Sovereigns, Inc., says, "Give it some more time! If it's not showing up, don't do anything yet!"

Annette Follower thanks Barbara C. for her questions and our panel of experts for their answers!

Annette gets position in company

While we're busy following Annette, she's not standing still! No more Skippy commercials for her!

In January Annette signed on with Armanino Foods as spokersperson! And that's not all! She's also become a director of the corporation, and she got some stock!

Armanino makes frozen pasta sauces! It used to be the Armanino Farms herb and spice company! Now it's part of the giant McCormick & Company!

Last year, this company sold $1.4 million worth of sauces! It has gone public!

Executive Summary

- ■ Don't know? You'll find out.
- ■ Location need not hinder.
- ■ Do what you love, the money will follow.

CAREER OPTIONS IN THE CARIBBEAN

A report for: Barbara C.

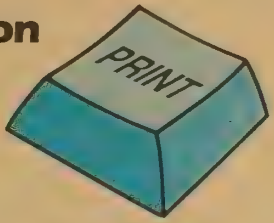
Prepared by:

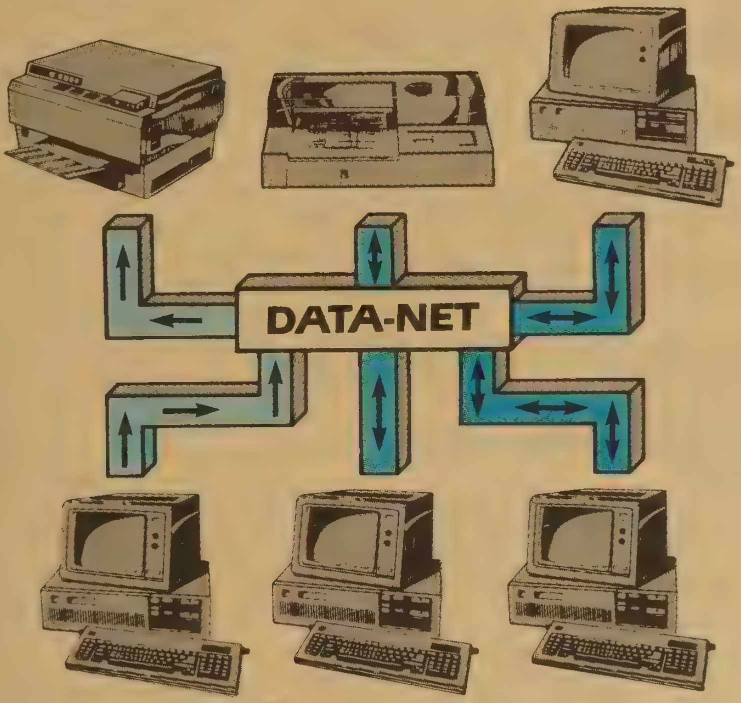
ON-PURPOSE CONSULTANTS
SAN FRANCISCO, CALIFORNIA

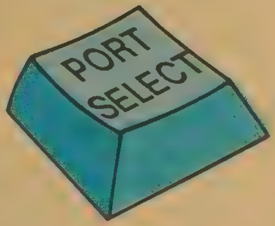
PageMaker PC is a useful tool for designing newsletters, as well as for less complex tasks such a memos and client reports.

Make a few key moves into networking

Simultaneous Operation



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Connect Computer to Computer or Multiple Computers to a Printer

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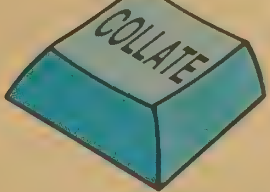

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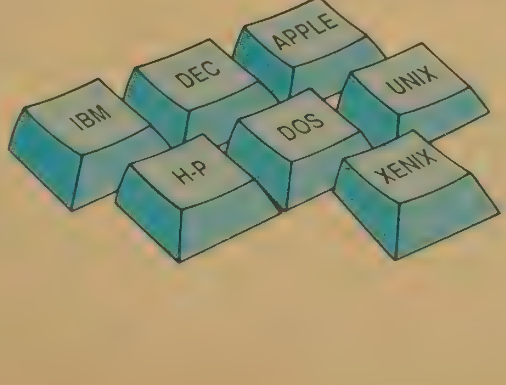
APPLE
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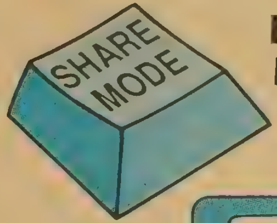
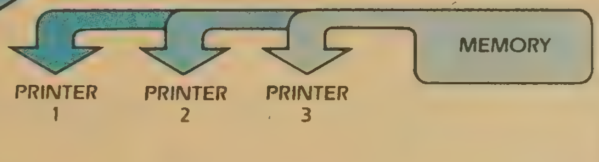


DATA-NET Routes Print Data to the Directed or Next Available Printer


MEMORY
PRINTER 1
PRINTER 2
PRINTER 3

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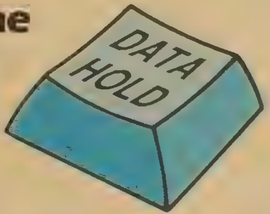

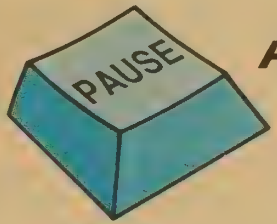

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Manufacturing & Marketing of "Interface Tools"

question from a client and prepares a report. Let's take a real-life friend's off-the-cuff remark and pretend she is a client, and see if *PageMaker* would earn its keep in our office.

Barbara C. is a highly successful woman stranded in paradise — a large Caribbean island. Her high-trajectory climb on the career path is on "pause." Most hard-charging careers, it seems, take place in less-than-paradise places. Barbara's forced sabbatical is by virtue of her love for, and marriage to, her husband, who was transferred from Washington, D.C., to San Juan, Puerto Rico, to take an important executive post.

A journalist who has been nominated for the Pulitzer Prize, Barbara C. has written for *Time*, *Fortune*, and the nation's major newspapers. Now that she lives in San Juan, the opportunities to excel are scarcer. And so is the old motivation. In a moment of whimsy, she sends me a note postmarked Santo Domingo. It reads, "What do you do when you discover your purpose in life is to sit on the beach and drink girl drinks with paper umbrellas? Could it be that my spiritual guide is Annette Funicello? Help — I'm confused!"

Now, imagine how a *research consultant* would handle this situation — especially if the question were serious, rather than whimsical. What would the consultant do? Probably do research, analyze the information, and deliver a report of recommendations.

To get a little more farfetched, the researcher might be moved to create a newsletter based on a single question formulated between margaritas on the sunny white sands. I've created just such a newsletter. It's called the *Annette Follower*, based on the premise that many people turn to follow Annette Funicello when the waves start crashing on their own personal beaches.

The more likely thing a research consultant would do in response to such a question, of course, would be to produce a professional-looking research report. That I did as well. Called "Career Options in the Caribbean," it takes the same information and presents it in a typical business format.

Using PageMaker

In putting together the finished products, by the way, I needed some professional help. Potential new users of *PageMaker* may want to keep this in mind when budgeting their total expenditure. Fred Barnhart of Quaestus International, a San Francisco computer consulting and training firm, helped me take my raw concept and rough-around-the-edges *PageMaker* files and turn them into something presentable. I don't think I could have done as well by myself without many hours of trial and error on the fine-tuning.

What is it like to use *PageMaker*? As computer programs go, it was very easy to learn. My familiarity with publications probably made it conceptually easier for me than it would be for someone with no such background. I learned the basics in a couple of hours, and, with the outside help, completed the first page of the newsletter and the first two pages of the research report in less than eight hours total.

Compare that to *Ventura Publisher*, the other major PC desktop publishing program. When I tried to learn that a year ago, I already had many pre-desktop publishing years of writing, laying out and editing under my belt. Even so, it took me well over 30 hours just to get the gist of *Ventura*. And I would say I already understand *PageMaker* far better than I do *Ventura*.

PageMaker puts out a package of newsletter templates, so you don't have to start from scratch designing a publication. The templates can help you avoid some horrendous first tries that could do some interesting things to your public image.

PageMaker was evidently created by people who are in the publications business, and unlike the vendors of most programs, they offer documentation that respects, rather than sneers at, the user.

The six lessons of the tutorial are meticulously thought out and very straightforward. They are, oddly enough, focused on teaching the user how to create a newsletter. Of course, those skills can be easily transferred to doing less complex documents like reports, proposals and business forms.

I had a problem with column rules — those thin vertical lines that separate columns of text — in my first hour, because I couldn't figure out how to erase them when they weren't drawn straight. I quit for a time and came back to my place in the manual. My question was answered right where I left off.

Like most people, I hate to read the manual. Fatigue makes me blind to details. And this brings up a very interesting point.

If you follow the directions closely, step by step, they are remarkably good. But they are also remarkably detailed. And not all of us are detail-oriented people — especially when it comes to visual things.

One truth that the desktop publishing industry has been remarkably lax in addressing is that not all of us are cut out to be graphic or pasteup artists. Anyone can learn to do anything, but sometimes it's cheaper, easier, more practical to give the job to someone who loves to do it, or at least is already good at it in the first place.

There's support out there if you're not a graphic designer: *PageMaker* puts out a package of newsletter templates, so you don't have to start from scratch designing a publication. If you've never done this sort of thing before, the templates can help you avoid some horrendous first tries that could do some interesting things to your public image.

For inveterate PC users, there's another consideration. To use *PageMaker*, one thing you'll have to do is to learn Macintosh protocol. Rather than control- and alt- key combinations, and function keys, you use a series of "pull-down menus" with a mouse. If you've never done this before — and there's no reason you would have for PC programs like *WordStar* and *Lotus* — in a way it's like learning a new computer.

Using desktop publishing on the PC can also require *buying* what's essentially a new computer, as well. You basically have to turn your PC into a graphics workstation (the moral equivalent of Macintosh) by adding a mouse, a graphics board, and having at least a 80286 processor and preferably a 80386. (I used a PC's Limited 386 with an EGA adapter, and, once the I had installed the mouse, which was a brief but major hassle because of some incorrect factory settings of the computer, it performed beautifully.)

In addition, you need a laser printer to get the high-quality printing that makes desktop publishing. (For true publications-quality printing, you'll need to use a phototypsetting machine like a Linotronic, which runs into six figures and is usually better rented than bought.)

So what's this program really for? Quaestus's Barnhart says, "Our clients start off with something in mind, and they always end up using it for about 15 other things — one of our clients bought it for their newsletter, and now they're using it for their annual report, for name badges at conferences, for forms; they also used it for invitations to their Halloween party."

Barnhart mentioned a law firm that does prospectuses for companies planning to offer stock. "They were spending $50 to $100 per page," he said, "and now they've gotten down to about $7 a page."

Barnhart has trained many people to use the program and says, "The good news about *PageMaker* is, it's simple. The bad news about *PageMaker* is, it's simple." Compared to *Ventura*, *PageMaker* lacks some bells and whistles. Certain sophisticated features, like indexing, table of contents generation, and the ability to automatically wrap text around graphics, are missing. In addition, repeating certain style features, like indentation and special type, can be accomplished automatically with *Ventura*; *PageMaker* requires manual insertion each time you want the special feature.

Aldus, *PageMaker*'s publisher, has promised to eliminate these problems in the soon-to-be-released next version of the program.

In printing the newsletter and the report, we had a problem Barnhart said he had never seen happen before: when I took the *PageMaker* .PUB file on a floppy from my computer to his, all the apostrophes, commas and dashes disappeared from the printout, even though they showed up on the screen. Manually replacing them in an article full of quotes was not a lot of fun.

In conclusion, if you want to get into desktop publishing, or spruce up your existing business documents, *PageMaker* may be the way to go. But you need to address the questions of additional expertise and equipment you will need to do it right: How will I get the quality of our articles up to speed? How will I make sure it doesn't look like it was designed by somebody out of control on drugs? What will I do to make sure the intelligence and professional image of my business is favorably reflected in the product we put out?

If you have good answers to those questions, boot up *PageMaker* and let those presses roll. ☐

David Garfinkel is a writing coach and has published worldwide. He coaches people in business writing and in writing for publication. He teaches a simple method for writing so basic even someone with a postgraduate degree can learn to write clear understandable prose. His phone is (415) 928-6318.

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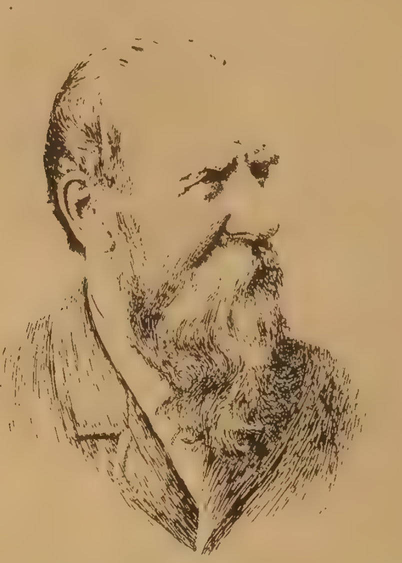

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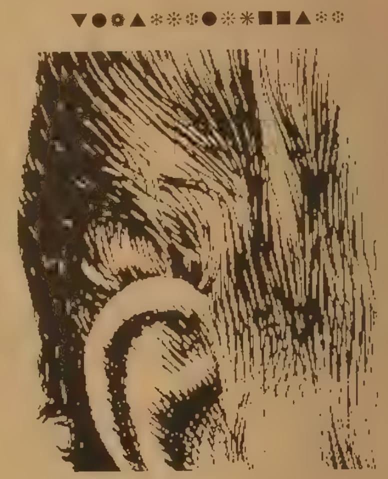

Examples of different formats.

The Abaton 300 Series Scanners And The Dance Of Nine File Formats

By Lenny Bailes

Fads and compulsions come and go amongst people who are attracted to personal computers. Obsessions differ in the Mac and PC worlds, however. Whereas the PC wizard seeks to suspend an ever-increasing number of balls in the air (preferably without having to quit *Lotus 1-2-3*), the Mac wizard seeks to conjure a golden rectangle and fill it with magical phantoms of ever increasing resolution and gray-scale content.

The Abaton 300 is one of a new generation of scanners which allows you to transcend the simple black/white, 72-dot-per-inch graphics of *MacPaint*. The new generation of scanners allows you to approach the image fidelity of the Linotronic machines used by most magazine and newspaper publishers.

With the Abaton scanner and its supporting software *C-Scan*, you can capture images at 300 dots per inch, look at them on screen in three viewing resolutions, and open up to four windows for editing, cutting & pasting individual scans. With a PostScript printer the images can be printed in any percent magnification or reduction with effortless control of placement on the page — all without saving to disk. PostScript images can be sent to a Linotronic machine at 1200 dots per inch.

To run the scanner you need a Mac with at least 512K of memory, (System v. 3.2, Finder v. 5.3, Laser Prep v. 3.1, or later versions), and *C-Scan*. On the newer Macs you can connect the scanner to either the modem port or the SCSI port. Abaton supplies the appropriate cables for SCSI and sells other cables separately. (You need an Apple MO189 cable to use the serial port on the newer Macs). The scanner can also be connected directly to an external hard disk with the SCSI adapter.

The Abaton 300/SF takes pictures on single sheets which are inserted through a roller-slot. The 300/FB scans from a flatbed glass-plate upon which you can place single sheets or books. *C-Scan* version 1.6, the current software, can read up to 95.8 square inches (8.4" x 11.4") on one scan. How much of this area you can read is a function of your memory and disk storage space. If you don't have enough RAM to hold a full page, you can tell *C-Scan* to temporarily store the information on disk.

Scan Modes

Pictures can be captured in three scan modes, line-art, halftone and gray-scale. *C-Scan* supports four-bit gray levels, which means you can get up to 16 possible shades of gray in one picture.

Line-art mode is what you would use to record a simple pen and ink sketch with only black and white areas, no shading. Pixels are either turned on or off in a one-to-one correspondence with your image.

Halftone mode is what you use for more complicated sketches or photographs. The gray-scale information is stored only in clusters of black and white, but the way these clusters are grouped creates the effect of representing an image with more than one color or shade. There are two fill-patterns which can be selected for background with *C-Scan* halftones: random and spiral. They make the backdrop which represents white space in your picture.

Gray-scale mode produces the truest image fidelity. Four-bit gray-scale scans create a bit-map which codes each pixel for 16 different levels of print intensity, rather than just on-off, black-white. (Four bits of storage information for each binary sample equals 2 Exponent 4 or 16). Gray-scale scans leave the decision about which dots will be on and off, and at what intensity, to the printer. This allows a picture to be resized and manipulated with very little loss of quality.

Gray-scale scanning also produces files of over one megabyte in length, which are automatically saved in the standard Aldus format (called TIFF, for Tagged Image File Format). Gray-scale TIFF files can be printed, viewed or manipulated in *PageMaker*, *Image Studio* or *Adobe Illustrator*. The current *C-Scan* cannot handle a gray-scale TIFF file or send it to the printer once it has been dumped to disk. At the Macworld Expo this January, Abaton announced that the next version of *C-Scan*, due for release sometime in March 1988, will have the capability to view and print gray-scale TIFF files.

Size-Reduction Modes

The Abaton 300 SF and FB scanners perform in five size-reduction modes, 100% (one-to-one ratio), 80%, 66%, 60%, and 25%. The Macintosh displays images on the screen at 72 dots per inch, and dumps pictures to the ImageWriter at the same resolution. A LaserWriter Plus prints at 300 dots per inch. At 100%, the Abaton scans at a 300 dot-per-inch resolution, at 80% a 240 dot-per inch-resolution, and so on.

This means that the Macintosh screen, with a resolution of 72 pixels per inch, will display approximately one quarter of a 100%-full page image. You can scroll around the screen to edit, or redisplay the image in a fit-all-on-screen mode, or a 300 dpi simulation mode. These simulations let you look at a full 8.4 x 11.4 inch scan within one screen, but the dot density is too high to allow a true representation of the finer points of an image as it will be printed. The 80, 66 and 60 percent reduction modes are somewhat like Xerox reduction. They allow you to take a full page scan and reduce it to a smaller bit-mapped area. The fidelity of the image is not significantly affected by these reductions, and the print menu allows you to re-expand the size of the final copy again via PostScript. (There is also a considerable saving on disk storage space when scans are done at less than 100%.)

The 25% reduction is different from the others. It is not accomplished by the scanner hardware, but by algorithms built into the software. The 25% scan is slower, but also does some halftone simulation to compensate for the loss of detail in the lower resolution. The black and white contrast and the brightness can be adjusted before scanning. This reduction size is ideal for saving images to a *MacPaint* format. At 72 dpi a *MacPaint* file can save about one quarter

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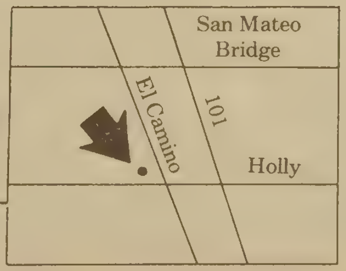

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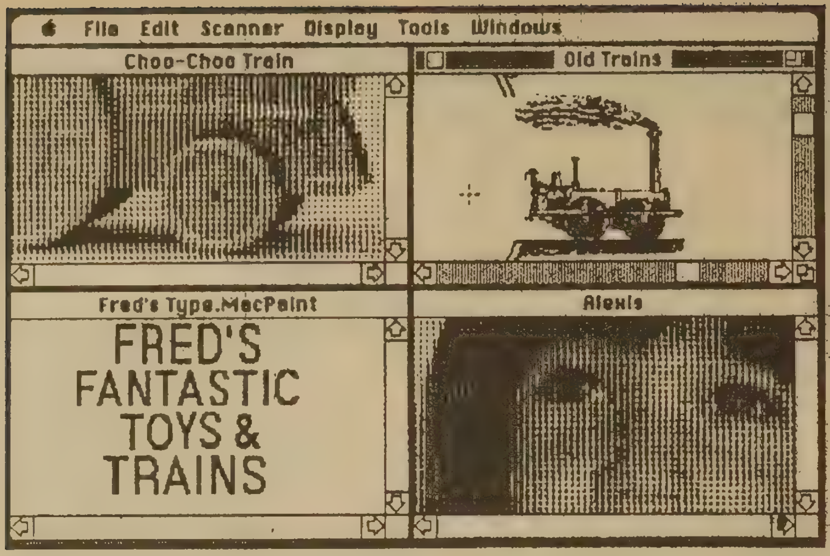

C-Scan lets you work in four windows at once.

of a 100% full page scan as an 8" x 10" screen. (The size limit on a *MacPaint* file is 576 dots wide by 720 dots high, or 8" x 10").

When you like what you see, after having adjusted the brightness (or contrast in the 25% mode), you can do simple editing with tools built into the program. The current *C-Scan* has scrolling, rectangle selection, line drawing and fat-bits editing. The version to be released in March will have a fuller complement of shape generating paint tools and insertable fonts. Any part of an image can be cut, saved or pasted into the Scrapbook at either 72 or 300 dots per inch with the current version. You can also open up to four windows on the screen to display different scans and cut and paste between them.

The Nine File Formats, And What They Work With

Pictures can be saved in nine different file formats: *C-Scan* Internal (condensed, takes less space), EPSF, TIFF, Compressed TIFF (CCITT), PostScript Text, FOTO, BMap, *MacPaint* and *SuperPaint*.

- EPSF (Adobe Encapsulated PostScript) is a file which contains text PostScript instructions plus the bitmapped image. Loadable in *PageMaker* and *Image Studio*, portable to PC environment for *PC PageMaker* or *Ventura Publisher*. Cannot be reloaded into *C-Scan*.
- **TIFF** (Tagged Image File Format) is the Aldus BitMap format which may contain gray-scale information. Loadable into *PageMaker*, *Image Studio*, *Adobe Illustrator* and other high end graphics programs. Halftones & line-art reloadable into *C-Scan*, gray-scale TIFF not reloadable.
- **CCITT** (TIFF Grp. 3) is a compressed TIFF file loadable into some Macintosh applications. Can be reloaded into *C-Scan*.
- **PostScript Text** is an all-ASCII file containing PostScript Language commands. Can't be reloaded into *C-Scan*.
- **FOTO** is a noncompressed format readable by *PageMaker* version 1.2.
- **BMAP** is a generic Quickdraw bitmap, a kind of *MacPaint* file with no header. For porting to non-Macintosh environments.
- **MacPaint** format is 72 dpi, maximum 8" x 10" size, universally loadable in Macintosh graphics applications.
- **SuperPaint** format creates a "main" *SuperPaint* file and extra "Laserbits" overlays to create the entire image.

Hands On

After a bit of experimenting, I decided that scanning black-and-white halftones and color photos at 60% of original size produced little image degeneration compared with the 100% scans. These images can easily be re-enlarged by 166% when sent to a PostScript printer, resulting in a picture the same size as the original. The print menu presents a shadowed mini-rectangle in a page-shaped box to show the size and location an image will have on an 8-1/2" x 11" page. You can center or otherwise adjust image placement with the mouse. If you're going to be working mostly in *PageMaker* or other programs which utilize TIFF and EPS files, 60% seems like the ideal scanning size. A 60% setting saves time during both scanning and printing, as well as storage space on your disk. You will also be able to see more of an image on one screen at 72 dpi.

One thing I like to do is port graphics over to MS-DOS for use with PC programs which will accept *MacPaint* files. Transferring *MacPaint* files to a PC can be done relatively easily. An Encapsulated PostScript file can also be sent to a PC via modem, TOPS, or MacLink. EPSF files can be loaded into *Ventura Publisher*, but you can't see the image on the screen or print it on a non-PostScript printer.

MacPaint files are accepted by a large number of Mac and PC applications, so it's useful to save graphics in this format. *C-Scan* offers a special *MacPaint* selection rectangle which will show the total on-screen area which can be saved as a *MacPaint* file. With a 300 dpi, full page image you can save about a quarter of a page (300 divided by 72 is about 4).

The 25% reduction option was designed mostly with *MacPaint* saves in mind. This reduction shrinks the image to 1/4 of a 300 dpi page, letting you save an 8" x 10" area out of an 8.3" x 11.4" page at 72 dpi. Image resolution with the 25% scans is not as good as with the other dot densities, but the scanning process is done differently, via software instead of hardware. Some gray-scale information is abstracted from the image to compensate for the reduced resolution.

It is possible to save a full page 100% (300 dpi) image as four 72 dpi *MacPaint* files, and then use a utility like *FullPaint*'s LaserPrint to tile them together into one picture on a LaserWriter. *C-Scan* allows you to save various parts of an image, and then see what's left over by deleting the saved portions.

Since the *C-Scan* display can be toggled to select an image at either 300 dpi or 72 dpi, you can paste an image into the Clipboard or Scrapbook at either resolution. If you paste the image into *MacDraw*, at 300 dpi it will look lumpy and dark on the screen, but since it's saved in a line-art format, it will look right when sent to the printer. Pictures can be saved in *SuperPaint* format, loaded into *SuperPaint* and saved as PICT files.

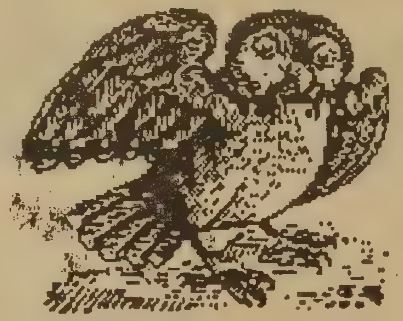

Image printed at 72 dots per inch

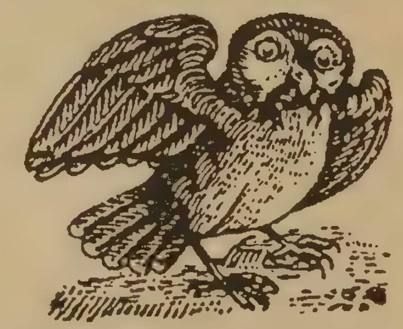

Image printed at 300 dots

The same image printed at 72 dpi (MacPaint) and 300 dpi.

The documentation for *C-Scan* contains instructions and tips for using saved images with *Adobe Illustrator*, *Ready, Set, Go*, *Graphic Works*, and *SuperPaint*, as well as *MacPaint*, *FullPaint*, and *MacDraw*.

One thing the documentation doesn't cover is that the 25% (slow scan) feature is a little temperamental. The maximum area which can be scanned at 25% is actually 8.3" x 11.4," rather than 8.4" x 11.4," as shown in the selection rectangle. If you select a larger width than 8.3," you will have to reboot your Mac. In addition, when I tried to scan several simple black and white images in line-art mode on a Mac II, the scanner went through its cycle and then the system bombed (even when the width was set to 8.3").

I reported these bugs to Abaton, and one of its tech people confirmed them. They hope to eliminate this quirk from the version of *C-Scan+* due to be released in March. Changing the brightness setting sometimes stops the bomb from coming up, and for some reason if you do the scan in line-art mode at 60% first, then repeat it at 25%, it works. The software works with no problem for halftone mode; the bug is only there for certain light-dark contrasts in line-art mode.

I experienced a similar difficulty with the gray-scale TIFF setting, bombing unless I selected gray-scale as the last thing I did in the configuration. Selecting gray-scale first, and then sizing the scan area or setting the reduction rate, got the bomb every time. Once I figured this out, I was able to select the gray-scale option last and had no problems.

C-Scan+, the next version of the software, will let you edit and print gray-scale TIFF files without having to use another program. There will also be a feature called PanelScan. PanelScan will be installed in the Macintosh's Control Panel, letting you activate the scanner and edit images from within any application without having to quit it.

The Abaton system is a midrange system. The four-bit, 16-level grays are the maximum which can be printed on a 300 dpi LaserWriter. Some packages at a higher price offer 16-bit, 256-level grays which can be printed on a 1200 dpi Linotronic 300. Some less expensive packages offer no gray-level scanning and a more awkward user interface, but also get the job done for simple halftones. For optimum image handling capability, Abaton recommends purchasing *Image Studio* from Letraset to work with gray-scale images once they are saved to disk. The gray levels are not truly represented on-screen below the Mac II level. If your printing is going to be at 300 dpi, you may never miss them.

I found the Abaton system to be generally reliable. It is sufficient to capture simple photographs, black and white drawings, and templates for a program like *Adobe Illustrator*. It produces reasonable facsimiles of some color photographs. The software is easy to use, and offers many convenient features for saving and printing images. (Abaton, a Division of Everex Systems, Inc., 48431 Milmont Drive, Fremont, CA 94538, 800/444-5321. Scan 300/SF, with *C-Scan* 1.6 software, $1895; Scan 300/FB, with *C-Scan* 1.6 software, $2295. Scan 300/FB-MS DOS (OCR only) w/ software $2595. Interface Kit for Macintosh $295. Interface kit for MS-DOS $295. *C-Scan* 1.6 software for the Macintosh $400. *WordScan* software for MS-DOS $700.) ☐

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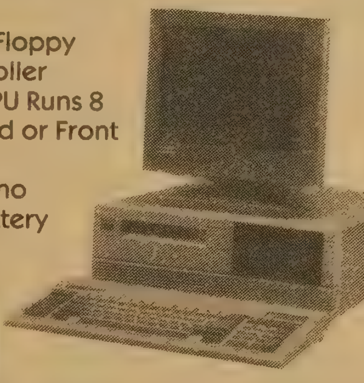

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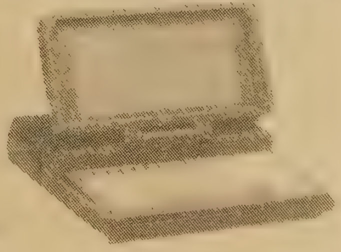

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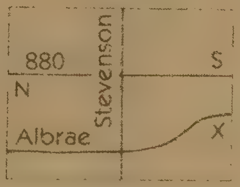

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The Impossible Dream!

GeoPublish On The Commodore

By Sue Albert

Full featured desktop publishing on the Commodore 64? Including laser printing? If I hadn't seen it with my own eyes, on my own Commodore 64, I wouldn't have believed it either. As I was beta-testing and exploring the powerful features of *GeoPublish* from Berkeley Softworks, I was producing a twelve page newsletter without disappointment in either the program or the end product.

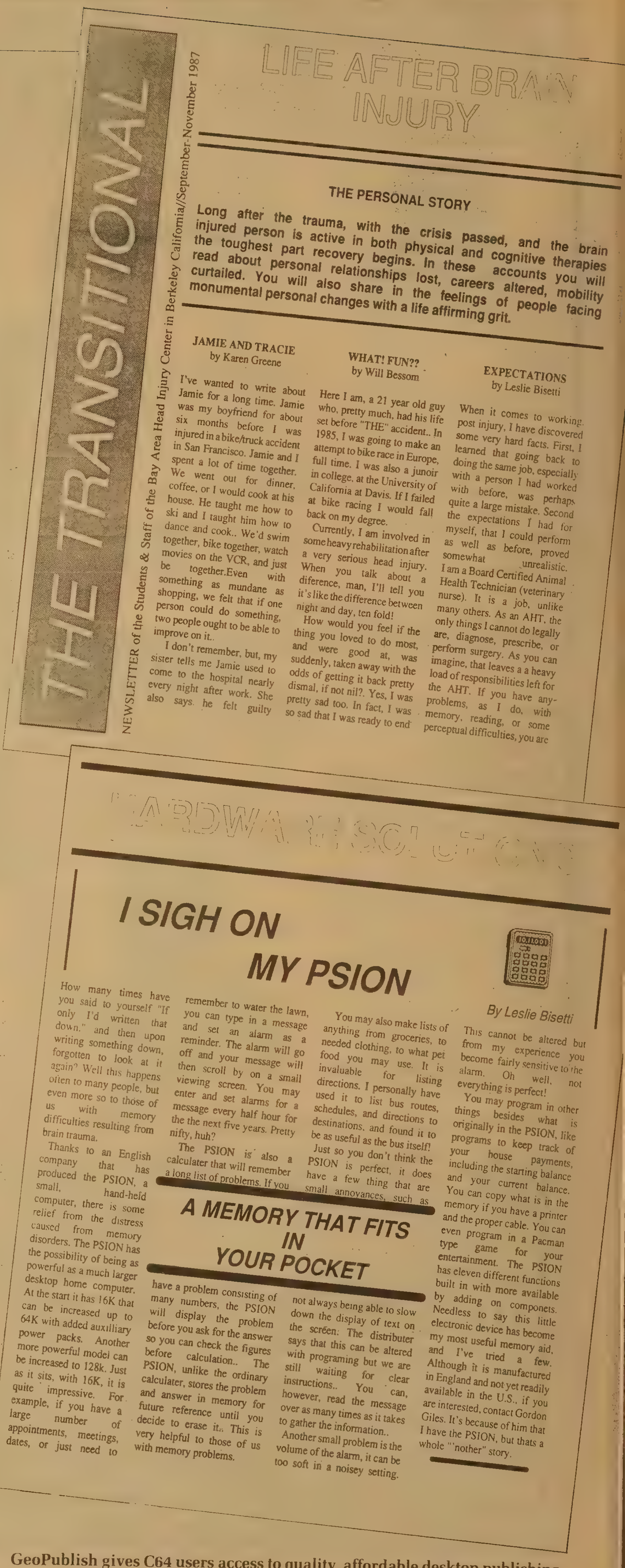
Up to now I had always felt I had come into the world without the GEOS chromosome. While GEOS programs intrigued and delighted me with their power and ingenuity, I always found myself either impatiently waiting for the screen to scroll or so bogged down in "housekeeping," moving those cute little icons around, that I never got to the job at hand. The purchase of a 256K RAM Expansion and a mouse let me really boogie around in *GeoWrite* and *GeoPaint*. It was *GeoPublish*, however, that revealed at last the solid logic of the GEOS system.

Now I can do all the things in composing a page that were formerly only highlights in my wildest "Suzie, girl-reporter" fantasies. I can size and mix the increasing garden of GEOS fonts, which can be positioned horizontally, vertically, and disguised with a variety of texture patterns. I can size graphics and place them anywhere on the page, layering them under or over text. I can bring in converted text files from my other word processors, edit them, set the fonts, and flow the text around graphics. I can create graphics and ornaments within the program. Headlines, framed boxes and ovals, and columns are all Mac easy and natural to create. Best of all, I am never committed to any layout, but can easily move or alter all the elements on the page, usually with a few mouse clicks. *GeoPublish* can be used without the RAM Expansion, and I tried it for a bit, but it is really too slow to be practical. Berkeley Softworks wisely recommends using expanded memory and a mouse for efficiency.

Any powerful desktop publishing program is complex and takes time to learn. *GeoPublish* is no exception. You are juggling the roles and the tools of a masterprinter, layout artist, and editor. At first, following the tutorial, I was all at sea, totally manual dependent, and without a grasp of either tools or concepts. My test page was an embarrassment. Little by little, using the program, I conquered the utilities and developed a smooth flowing work pattern. A few more hours and I was really having fun. The earth moved with the revelation that in using the RAM Expansion with *GeoPublish*, I had what amounted to mini-multi-tasking. I could load my page workdisk into RAM and then go "out" to my disk drive, convert text files or graphics from non-GEOS disks, and bring them back into RAM, all without endless reloading.

As I began to relax into my GeoRhythm, I noticed a mysterious shortage of memory in the RAM expansion. Instead of the RAM's whole 256K I only had 155K to use. A call to tech support at BSW solved the mystery. It seems the Movedata program that allows such amazing screen movement and redraws in RAM eats over 100K, leaving work space in RAM just equal to the disk storage limits. This means you must do some careful preplanning, a bit of juggling, and make hard choices in the number of fonts, graphics and text files to use on a page. Some people might think this an asset to good, uncluttered design; however, I am already hearing whispers along the "People's GEOS grapevine" about GEOS on an eprom, adding memory to your C64 RAM Expansion or using the 512K expansion for the C128, and a long anticipated GEOS in ROM. With these fixes the 1581 3½" drive would add necessary disk storage to balance the additional memory.

Since even *GeoPublish* can't turn the C64 into an 80 column machine, you work on a half-screen size representation of a "full page" in the three work modes. Master Page is where you create the bones of the document layout, those elements



THE TRANSITIONAL

NEWSLETTER of the Students & Staff of the Bay Area Head Injury Center in Berkeley California/September-November 1987

LIFE AFTER BRAIN INJURY

THE PERSONAL STORY

Long after the trauma, with the crisis passed, and the brain injured person is active in both physical and cognitive therapies the toughest part recovery begins. In these accounts you will read about personal relationships lost, careers altered, mobility curtailed. You will also share in the feelings of people facing monumental personal changes with a life affirming grit.

JAMIE AND TRACIE
by Karen Greene

I've wanted to write about Jamie for a long time. Jamie was my boyfriend for about six months before I was injured in a bike/truck accident in San Francisco. Jamie and I spent a lot of time together. We went out for dinner, coffee, or I would cook at his house. He taught me how to ski and I taught him how to dance and cook.. We'd swim together, bike together, watch movies on the VCR, and just be together.Even with something as mundane as shopping, we felt that if one person could do something, two people ought to be able to improve on it..

I don't remember, but, my sister tells me Jamie used to come to the hospital nearly every night after work. She also says. he felt guilty

WHAT! FUN??
by Will Bessom

Here I am, a 21 year old guy who, pretty much, had his life set before "THE" accident.. In 1985, I was going to make an attempt to bike race in Europe, full time. I was also a junoir in college, at the University of California at Davis. If I failed at bike racing I would fall back on my degree.

Currently, I am involved in some heavy rehabilitation after a very serious head injury. When you talk about a diference, man, I'll tell you it's like the difference between night and day, ten fold!

How would you feel if the thing you loved to do most, and were good at, was suddenly, taken away with the odds of getting it back pretty dismal, if not nil?. Yes, I was pretty sad too. In fact, I was so sad that I was ready to end

EXPECTATIONS
by Leslie Bisetti

When it comes to working. post injury, I have discovered some very hard facts. First, I learned that going back to doing the same job, especially with a person I had worked with before, was perhaps quite a large mistake. Second the expectations I had for myself, that I could perform as well as before, proved somewhat unrealistic.

I am a Board Certified Animal Health Technician (veterinary nurse). It is a job, unlike many others. As an AHT, the only things I cannot do legally are, diagnose, prescribe, or perform surgery. As you can imagine, that leaves a a heavy load of responsibilities left for the AHT. If you have any-problems, as I do, with memory, reading, or some perceptual difficulties, you are

I SIGH ON MY PSION

By Leslie Bisetti

How many times have you said to yourself "If only I'd written that down." and then upon writing something down, forgotten to look at it again? Well this happens often to many people, but even more so to those of us with memory difficulties resulting from brain trauma.

Thanks to an English company that has produced the PSION, a small, hand-held computer, there is some relief from the distress caused from memory disorders. The PSION has the possibility of being as powerful as a much larger desktop home computer. At the start it has 16K that can be increased up to 64K with added auxilliary power packs. Another more powerful model can be increased to 128k. Just as it sits, with 16K, it is quite impressive. For example, if you have a large number of appointments, meetings, dates, or just need to remember to water the lawn, you can type in a message and set an alarm as a reminder. The alarm will go off and your message will then scroll by on a small viewing screen. You may enter and set alarms for a message every half hour for the the next five years. Pretty nifty, huh?

The PSION is also a calculater that will remember a long list of problems. If you have a problem consisting of many numbers, the PSION will display the problem before you ask for the answer so you can check the figures before calculation.. The PSION, unlike the ordinary calculater, stores the problem and answer in memory for future reference until you decide to erase it.. This is very helpful to those of us with memory problems.

A MEMORY THAT FITS IN YOUR POCKET

You may also make lists of anything from groceries, to needed clothing, to what pet food you may use. It is invaluable for listing directions. I personally have used it to list bus routes, schedules, and directions to destinations, and found it to be as useful as the bus itself!

Just so you don't think the PSION is perfect, it does have a few thing that are small annoyances, such as not always being able to slow down the display of text on the screen: The distributer says that this can be altered with programing but we are still waiting for clear instructions.. You can, however, read the message over as many times as it takes to gather the information..

Another small problem is the volume of the alarm, it can be too soft in a noisey setting. This cannot be altered but from my experience you become fairly sensitive to the alarm. Oh well, not everything is perfect!

You may program in other things besides what is originally in the PSION, like programs to keep track of your house payments, including the starting balance and your current balance. You can copy what is in the memory if you have a printer and the proper cable. You can even program in a Pacman type game for your entertainment. The PSION has eleven different functions built in with more available by adding on componets. Needless to say this little electronic device has become my most useful memory aid, and I've tried a few. Although it is manufactured in England and not yet readily available in the U.S., if you are interested, contact Gordon Giles. It's because of him that I have the PSION, but thats a whole "'nother" story.

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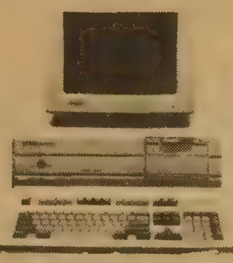

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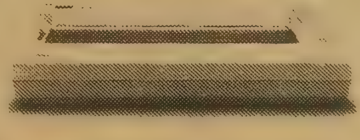

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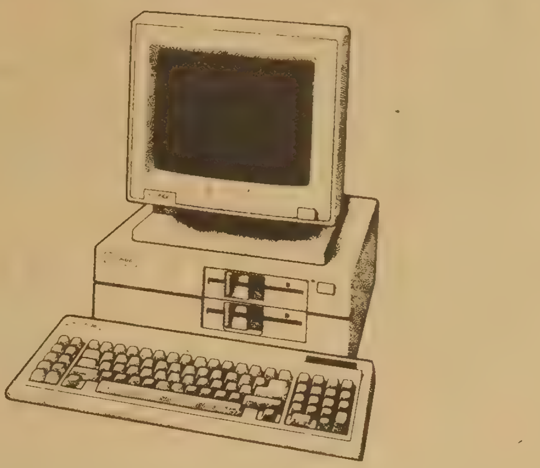

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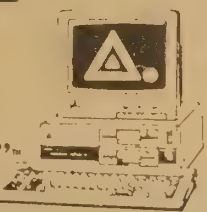

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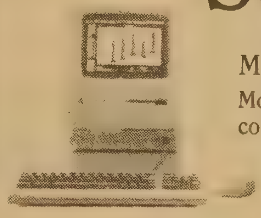

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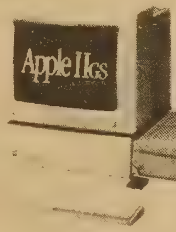

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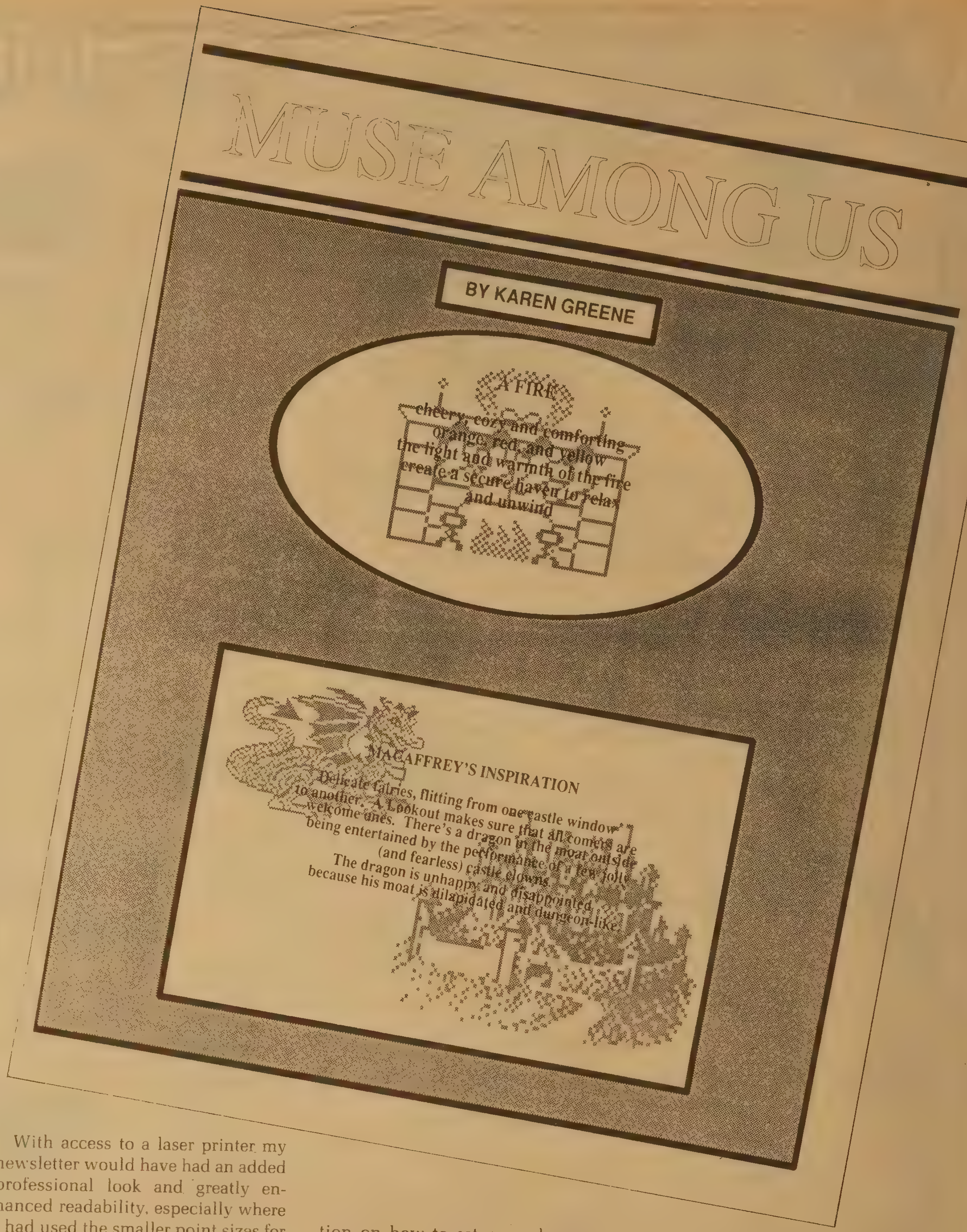
The Page Layout mode is where you design the page and bring in text and graphics. Text may be edited with the built-in *GeoWrite* word processor, which converts all imported versions of *GeoWrite* files to version 2.1. Text size and fonts are set there. Text areas are "opened" on the Page Layout screen. After just a few clicks and a dialog box, the text flows into the opened area. Before leaving Page Layout, text must be "rippled," a short process that heralds the birth of some new GeosJargon.

In Page Layout, graphics can be imported as a GEOS photo scrap from *GeoPaint* or from non-GEOS drawing programs after conversion. Using the Graphics Grabber from the *DeskPack 1*, you may bring in graphics from *Print Shop*, *PrintMaster* and *Newsroom*. All graphics can be easily sized, repositioned, and layered using the battery of options.

You are given awesome creative freedom in the Page Graphics mode, with the large zoom screen making text visible and all the benefits of a "pistol packing" tool box. The host of options lets you fine-tune details and add slick ornamentation to the page. You can insert headlines, subheads, and sidebars, in fonts with a variety of styles, using point sizes ranging from 4 to 192. Text, lines in many sizes, framed boxes and circles, and fills can be moved freely and patterned. You may create your own graphic objects with the full complement of drawing tools. You have "snap," "ratchet," and a tight keyboard cursor control, for precision page placement.

Because I was trying to produce a newsletter on deadline before I had earned my *GeoPublish* wings, I developed my own free-form method to work around memory restrictions that will allow any number of pages to be created. I built separate workdisks for each page, using only one Master Page layout, foregoing the automatic page numbering, etc., and used just two fonts, which I set in a mix of styles, sizes, and patterned guises. I then had plenty of space to experiment with complex and interesting layout designs. I got twelve pages with a unifying structure and a lot of visual variety. When I hit a snag (no doubt through ignorance), bringing up text to overlay a graphic, it was simple to create another page, roll back my printed page, and do a traditional print overlay.



MUSE AMONG US

BY KAREN GREENE

A FIRE
cheery, cozy and comforting
orange, red, and yellow
the light and warmth of the fire
create a secure haven to relax
and unwind

MACAFFREY'S INSPIRATION
Delicate fairies, flitting from one castle window
to another. A Lookout makes sure that all comers are
welcome ones. There's a dragon in the moat outside
being entertained by the performance of a few jolly
(and fearless) castle clowns.
The dragon is unhappy and disappointed
because his moat is dilapidated and dungeon-like.

With access to a laser printer my newsletter would have had an added professional look and greatly enhanced readability, especially where I had used the smaller point sizes for text. I know of no copy services in the Bay Area that provide laser printing for Commodore computers as yet. Pro-Mark Services in Wisconsin is a fast mail service (also accessible via modem on Quantum Link). *GeoPublish* is going to create the demand some enterprising local person is sure to fill.

In using the RAM Expansion it pays to strictly observe the sacred law, Save Frequently, to assure work gets preserved on disk. Though I managed a few crashes and ran myself in some corners with my blundering "Forget the manual and plunge ahead" attitude, I found no repeatable bugs.

However, Berkeley Softworks committed major sins of omission in writing the manual. I found the page setup procedures almost incomprehensible, and the scanty information on how to set up and manage workdisks inadequate. The most serious, and most traditional omission, lies in the skimpy index where you will *not* find essential words like "headline" or "page setup menu." Repeatedly thumbing through a 160-page manual is maddening. Berkeley Softworks has made, in my estimation, an incorrect assumption that all purchasers of *GeoPublish* will be GEOS articulate. I think they underestimate the interest affordable desktop publishing will create. This is a revolutionary "low-end" product. For under a $1000, the price of a Commodore 64 or 128 including *GeoPublish*, a budget conscious school, club, church, or small business could produce professional quality, high impact, printed materials such as newsletters, invoices, flyers, advertisements and attractive mailers.

I feel *GeoPublish* is going to make a lot of users take a second look at their Commodores before they trade up to more powerful machines. It may even sell a few Commodores that will become dedicated desktop publishers. Those that do sell or pass down their computers will restart the cycle for a lucky new generation of very powerful users. ☐

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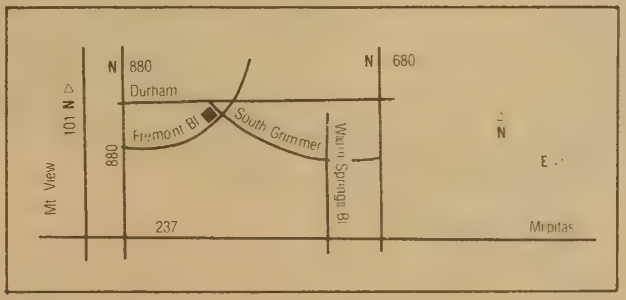

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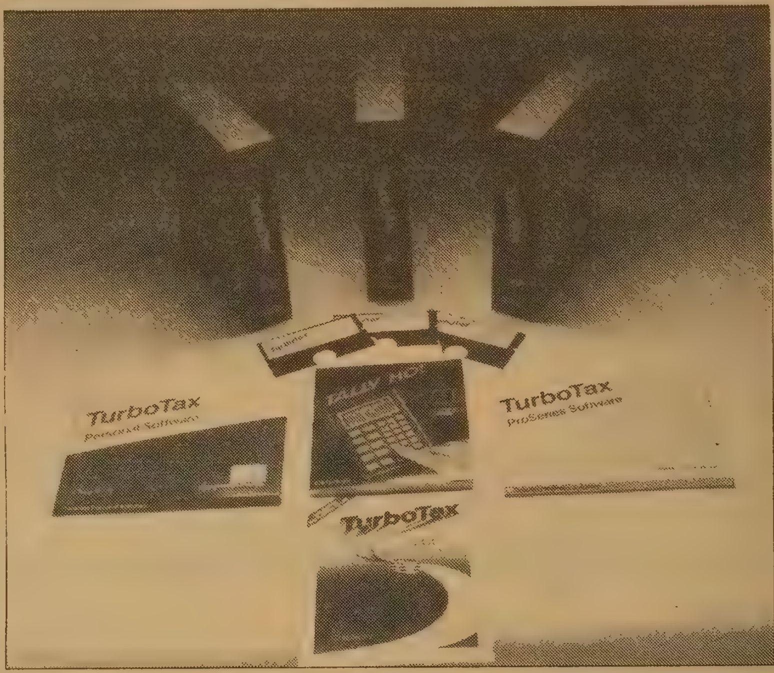


TurboTax:

An Ally On April 15

By Birrell Walsh

Ordinarily, we don't print reviews of things we are not finished with. We make an exception this month to let you know about a most useful product — before Tax Day.

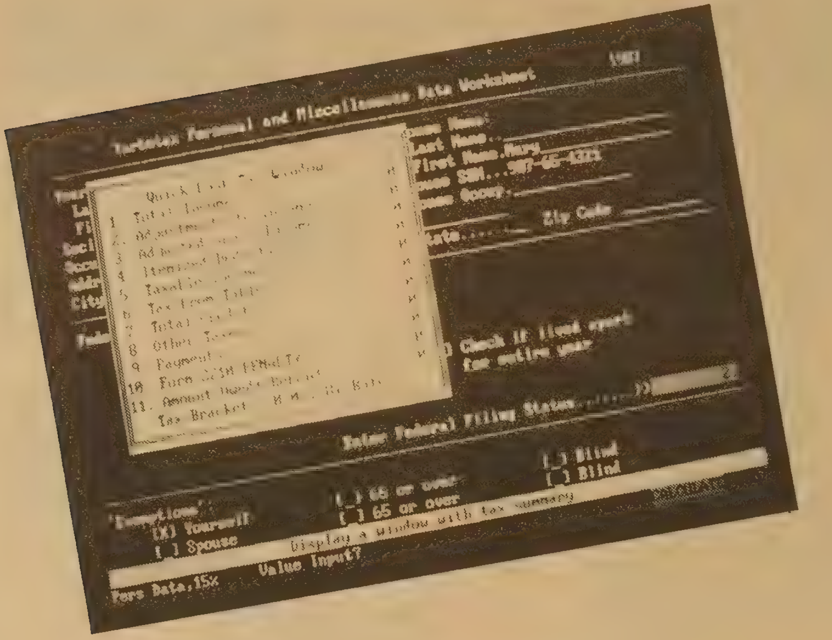
If you grow livid every year at tax time, you might like having an electronic ally. We found one in *TurboTax*'s 1987 version. It is designed to let you calculate your Federal and State income taxes on your computer. It transfers information from form to form. It checks some of your entries for accuracy and permissibility — though not all of them. It includes on-line IRS tax publications. And in the end, if you have an appropriate dot-matrix printer, it prints the returns for you. Not bad, for one package.

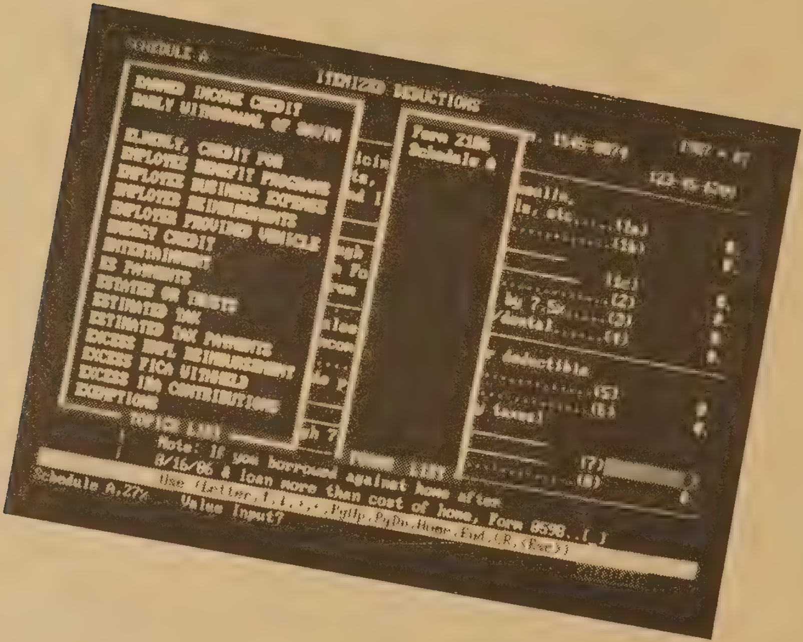
You must wonder if it makes the awful experience of calculating taxes easier for the lay person. It seems to. Since it's not April 15 yet, we can't give you a final report, but here's our initial reaction.

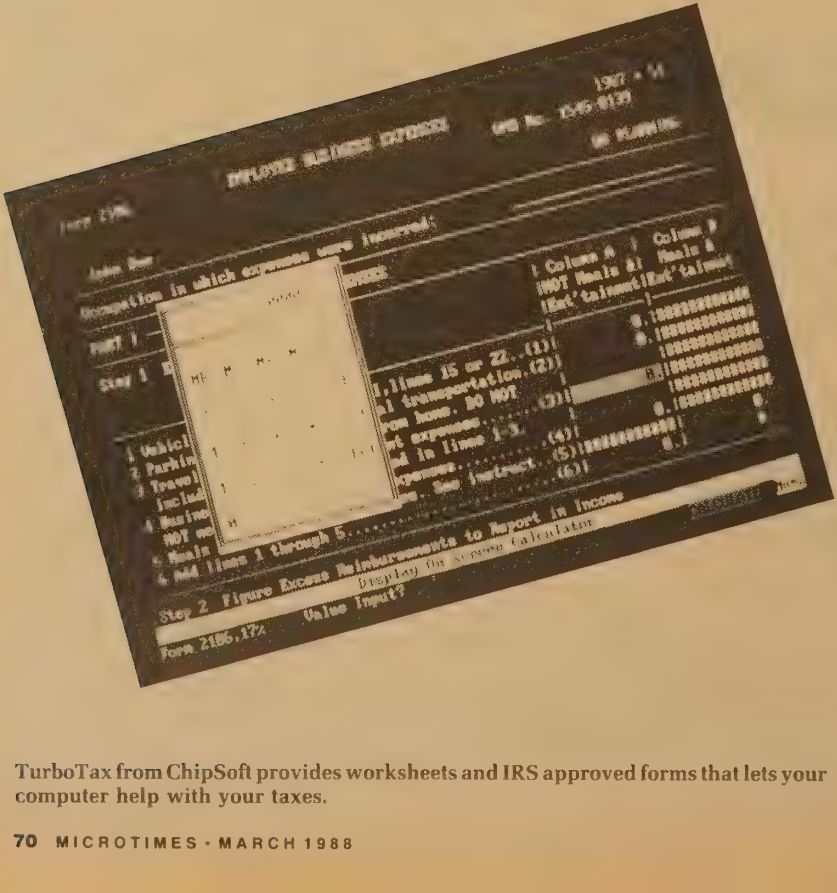
TurboTax provides 31 forms and eight worksheets. It is likely that *TurboTax* has every form you will need for your personal and small business tax reports. We certainly found all those forms that we've used in the past. The worksheets allow you to enter all your information from your W-2 forms in one place, to calculate your depreciation, your IRA — even Passive Activity. That's such a lovely phrase; only the government and Zen Buddhists would want a report on it.

TurboTax has cross-referenced all its forms. What has been entered on one form is transferred automatically to other relevant forms. That means that you do not have to keep track of all the "from line 79 of form abcd to line 7 of form defg" foolishness that can so quickly drive you nuts. In the case of depreciation, for instance, it provides you with a worksheet. For each item you enter it provides a questionnaire that allows you to answer all the IRS's demands about your business depreciation. For those who work with computers this is particularly delightful, as computer equipment is "listed property" and subject to special reporting requirements.

What you see on your screen looks like the beloved IRS form itself, so you can follow along in IRS instructions. Behind the scenes, though, are a number of utilities. *TurboTax* has both a pop-up calculator and a pop-up notepad so you can do on-screen the calculations and the "what does *this* mean?" notes. You can also generate "supporting schedules" for summary items. If you want to make a detailed list of office expenses, you place the cursor on the appropriate line of Schedule C and then type **/X**. This "expands" the cell. You can then list the items and the cost of each. *TurboTax* will give you a running total of the items you have entered. When you type "Escape," the







TurboTax from ChipSoft provides worksheets and IRS approved forms that lets your computer help with your taxes.

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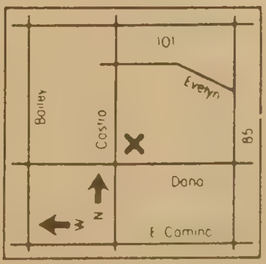

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total will be entered into the appropriate blank in Schedule C. You can have *TurboTax* print out one "supporting schedule" at a time or all of them at once.

TurboTax is part of a family of programs. The personal version is cousin to a professional tax-preparer's version. You can tell that a lot of personal and professional experience has gone into the design of the current version of the program. The forms that you have used to enter data are shown in highlighted video on the forms menu. There is a window in which you can see your tax obligation as it stands with the information you have entered so far. With one key you can jump back and forth between any two forms to see the consequences of a tax strategy.

This year the program also includes the IRS's instructions for many of the various forms. You can bring up those instructions and scan through them without leaving the form on which you are working. It is convenient to have everything in one place, and ChipSoft is trying to make their program replace all the forms, instructions, and scraps of paper that you have on your desk in April. We would say they have succeeded. So far we did not have to reach for a calculator, do a long-hand calculation, or find a tablet to make a note. Everything is stored in *TurboTax*.

When you have entered all the data, you can ask the program to examine all your forms for completeness. It will do so and give you a list of all those boxes you forgot to check and all the lines you did not fill in. Be aware, though, that it is you, the taxpayer, who are responsible for completeness.

When you have filled in the lines and checked those boxes, you can have *TurboTax* print the results. The IRS has approved *TurboTax*'s dot-matrix printed forms for submission. That means that if you have one of the supported printers, you can file the form you print. You will not need to fill out the forms by hand, or struggle to line up a form in your printer. You can also have printed all the supporting schedules that detail your expenses and contributions, to submit with your tax forms and keep for your records.

You can use *TurboTax* to plan your 1988 tax strategy. It comes preloaded with 1988 tax rates and rules. You can see what your tax situation is by entering data as often as you wish, and manage your finances accordingly.

What you see on your screen looks like the beloved IRS form itself, so you can follow along in IRS instructions. TurboTax has both a pop-up calculator and a pop-up notepad so you can do on-screen the calculations and the "what does this mean?" notes. You can also generate "supporting schedules" for summary items.

TurboTax offers state forms for California and 25 other states as well as the federal form. You can arrange to transfer data from the federal to the state form, saving all the re-entry and recalculation which is usually part of the state return.

These are the things I have discovered so far about *TurboTax*. It is particularly useful — I think it has saved me about $120 dollars already — but here are some things to be aware of when using the program.

It will not replace elementary tax knowledge. You need to understand how the forms interlock. *TurboTax* will not protect you from data-entry errors. If you list interest payments as $26 rather than $2600, *TurboTax* will not catch the error. It will pass the error through to all the forms on which it should be entered. You need to check your entries in *TurboTax* at least as carefully as you check hand-entered data.

If preparing taxes is a horror you just can't face, *TurboTax* is not for you. Your tax-preparer may well be using it, and it is best to let that person handle the matter for you. But if you fight your way through the tax-form thicket year after year, *TurboTax* is a worthy ally. (*TurboTax* version 5 (for 1987 taxes) $75 for Federal returns, $40 for California (or other state) returns. Requires: IBM computers or compatibles with 256K. ChipSoft, 5045 Shoreham Place, Suite 100, San Diego, CA 92122. 619/453-8722.) ☐

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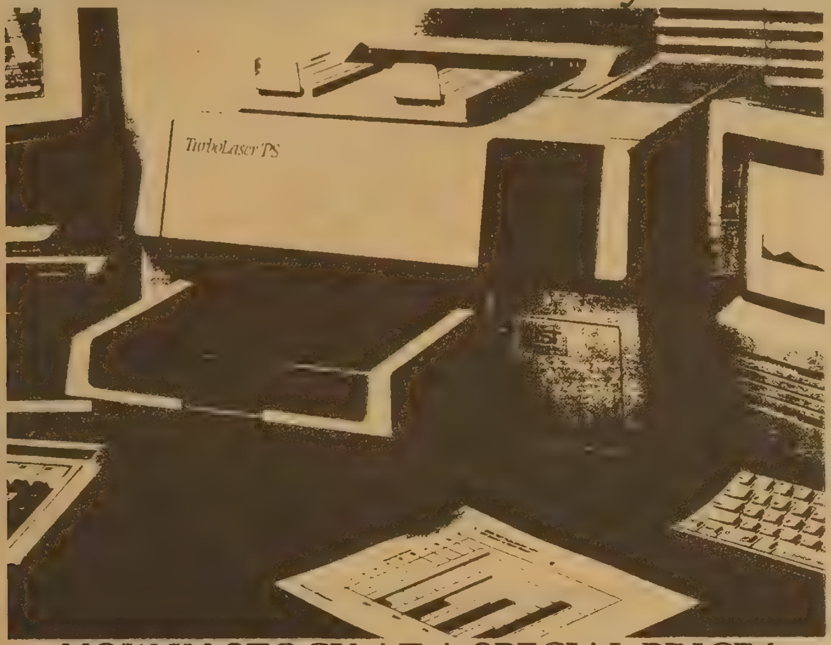

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SeeMORE For 1-2-3:

The Big Picture For Spreadsheets

By Woody Liswood

Do you spend significant amounts of time staring at spreadsheets? Do you wish you could stretch the screen in both directions so that you can see, on screen, as much as you can print on paper?

SeeMORE does just that. *SeeMORE* is one of the new Lotus *1-2-3* programs which, when added in, gives you a variety of screen sizes to view. *SeeMORE* also lets you control the screen color or use reverse video.

SeeMORE works with *1-2-3* Release 2.0 or later on IBM or compatible computers which have CGA, EGA, VGA, or Hercules graphic display cards.

As you know, the normal display screen in *1-2-3* is 76 characters wide by 20 rows deep. Using *SeeMORE* you get various screen sizes depending on the type of display card you use. *SeeMORE* has four looks or fonts: Tiny, Small, Medium, and Normal. The following chart shows just how many characters wide by rows deep you can display with the various adapters.

	Normal	Medium	Small	Tiny
CGA	76x20	87x23	102x28	124x28
EGA	76x20	102x38	124x38	156x53
VGA	76x20	102x38	124x38	156x53
Hercules	76x20	116x38	140x38	176x53

Installing *SeeMORE* is a piece of cake. First copy all the program files from the *SeeMORE* distribution disk into the subdirectory where you keep your *1-2-3* program files. Then run the Add-in Manager program to add itself to the default driver file called 123.set. You must also insure that you have the 123.dyn file from your printgraph disk in your *1-2-3* directory. When you inspect your directory you will find that there are a number of .ADN files. If you are using an EGA graphic board and monitor, you should keep the EGAMOR.ADN file and can delete the rest.

Next, run *1-2-3*. Now that you have the Add-in manager installed, an ALT-F10 will invoke it for use. The first time through, select ATTACH from the Add-in managers menu. Choose the appropriate file such as EGAMOR.ADN for your EGA system. Next, you must select a "hot" key to call up the *SeeMORE* menu so that you can access the various features. I selected ALT-F9. I also instructed *1-2-3* to automatically load *SeeMORE* each time I run *1-2-3*. At that point I also said I wanted *SeeMORE* to start using the Medium screen font on my EGA board. That gives me a 102 x 38 screen. That's about it.

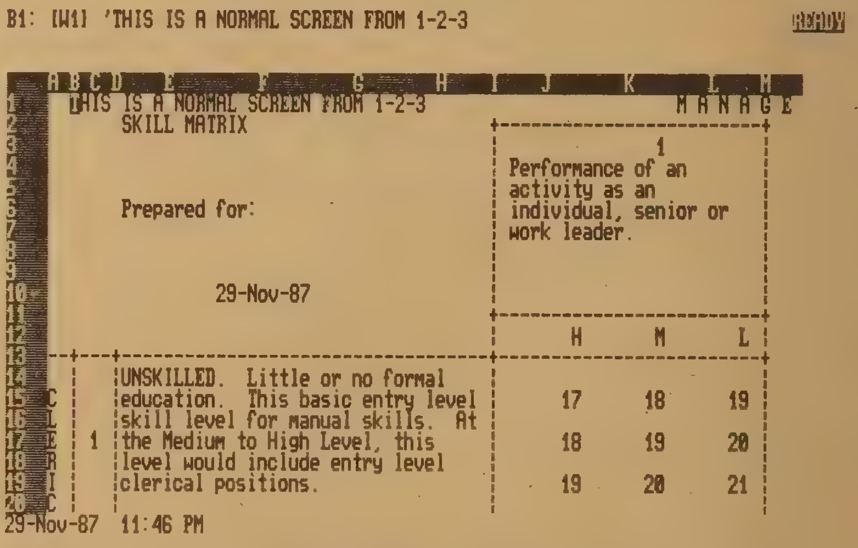
Now, every time *1-2-3* boots, I get the smaller font and can see more of my work and I don't feel so frustrated in trying to get 12 months of data on a six month display screen.

The *SeeMORE* menu, when called forth with an ALT-F9, allows you to instantly change between font sizes, or to reverse the display from black on white to white on black. An option menu allows you to change the color of both the background and the foreground. There is an option to only display alpha characters in upper case. And, since the Small and Tiny fonts may be difficult to read at all times, you can have the *1-2-3* menu displayed in a larger font while the remaining screen is at your selected smaller sized font. A rather nice touch.

SeeMORE also comes with a program called GRAFPLUS. It allows you to print the *SeeMORE* screens directly on a variety of dot matrix, laser or inkjet printers. Actually, if you have a laser, you run a program called GRAFLASR rather than GRAFPLUS. GRAFPLUS is a memory resident program which must be run prior to your running *1-2-3*. It actually will work with any program which displays standard graphics. GRAFPLUS will allow portrait as well as landscape orientation when printing. When you run it, you select your printer from a menu of choices, then tell what graphics card you are using, tell whether you want reverse printing, and then select landscape or portrait orientation. When you are in *1-2-3*, a Shift-PrtSc shoves the current screen over to your printer.

One oddity about GRAFPLUS is that there is no way to set a default mode for your printer and

> **Now every time 1-2-3 boots, I get the smaller font and can see more of my work, and I don't feel so frustrated in trying to get 12 months of data on a six month display screen.**



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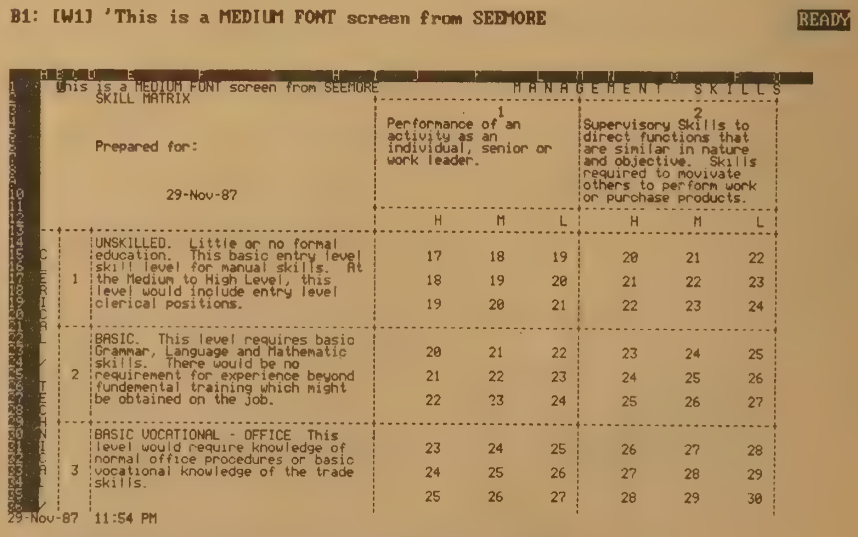
B1: [W1] 'THIS IS A NORMAL SCREEN FROM 1-2-3                          READY

  A B C D    E        F        G        H    I    J      K      L     M
 1 THIS IS A NORMAL SCREEN FROM 1-2-3                       M A N A G E
 2      SKILL MATRIX                     +-------------------------+
 3                                       |           1             |
 4                                       | Performance of an       |
 5                                       | activity as an          |
 6      Prepared for:                    | individual, senior or   |
 7                                       | work leader.            |
 8                                       |                         |
 9                                       |                         |
10            29-Nov-87                  |                         |
11                                       +-------------------------+
12                                       |    H       M       L    |
13 --+---+-------------------------------+-------------------------+
14   |   |UNSKILLED.  Little or no formal|                         |
15 C |   |education.  This basic entry level|  17     18      19    |
16 L |   |skill level for manual skills.  At|                       |
17 E | 1 |the Medium to High Level, this |   18      19      20    |
18 R |   |level would include entry level |                        |
19 I |   |clerical positions.            |   19      20      21    |
20 C |   |                               |                         |
29-Nov-87  11:46 PM
```

Illustration One shows what the NORMAL 1-2-3 screen looks like.



```
B1: [W1] 'This is a MEDIUM FONT screen from SEEMORE                              READY

 1 This is a MEDIUM FONT screen from SEEMORE          M A N A G E M E N T   S K I L L S
 2     SKILL MATRIX                       +------------------------+-------------------------+
 3                                        |           1            |         2               |
 4                                        |Performance of an       |Supervisory Skills to    |
 5                                        |activity as an          |direct functions that    |
 6     Prepared for:                      |individual, senior or   |are similar in nature    |
 7                                        |work leader.            |and objective.  Skills   |
 8                                        |                        |required to movivate     |
 9                                        |                        |others to perform work   |
10           29-Nov-87                    |                        |or purchase products.    |
11                                        +------------------------+-------------------------+
12                                        |   H       M       L    |   H       M       L     |
13 --+---+--------------------------------+------------------------+-------------------------+
14   |   |UNSKILLED.  Little or no formal  |                        |                         |
15 C |   |education.  This basic entry level|  17      18      19   |   20      21      22    |
16 L |   |skill level for manual skills.  At|                       |                         |
17 E | 1 |the Medium to High Level, this   |   18      19      20   |   21      22      23    |
18 R |   |level would include entry level  |                        |                         |
19 I |   |clerical positions.              |   19      20      21   |   22      23      24    |
20 C |   |                                 |                        |                         |
21 A +---+---------------------------------+------------------------+-------------------------+
22 L |   |BASIC.  This level requires basic|                        |                         |
23   |   |Grammar, Language and Mathematic |   20      21      22   |   23      24      25    |
24 / |   |skills.  There would be no       |                        |                         |
25   | 2 |requirement for experience beyond|   21      22      23   |   24      25      26    |
26 T |   |fundemental training which might |                        |                         |
27 E |   |be obtained on the job.          |   22      23      24   |   25      26      27    |
28 C |   |                                 |                        |                         |
29 H +---+---------------------------------+------------------------+-------------------------+
30 N |   |BASIC VOCATIONAL - OFFICE  This  |                        |                         |
31 I |   |level would require knowledge of |   23      24      25   |   26      27      28    |
32 C |   |normal office procedures or basic|                        |                         |
33 A | 3 |vocational knowledge of the trade|   24      25      26   |   27      28      29    |
34 L |   |skills.                          |                        |                         |
35   |   |                                 |   25      26      27   |   28      29      30    |
36 / |   |                                 |                        |                         |
29-Nov-87  11:54 PM
```

Illustration Two shows the same worksheet at MEDIUM.

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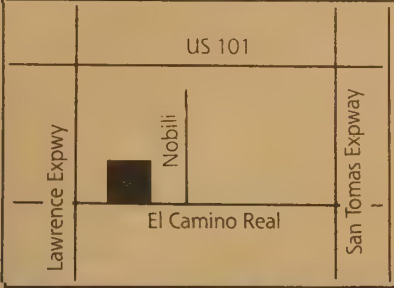

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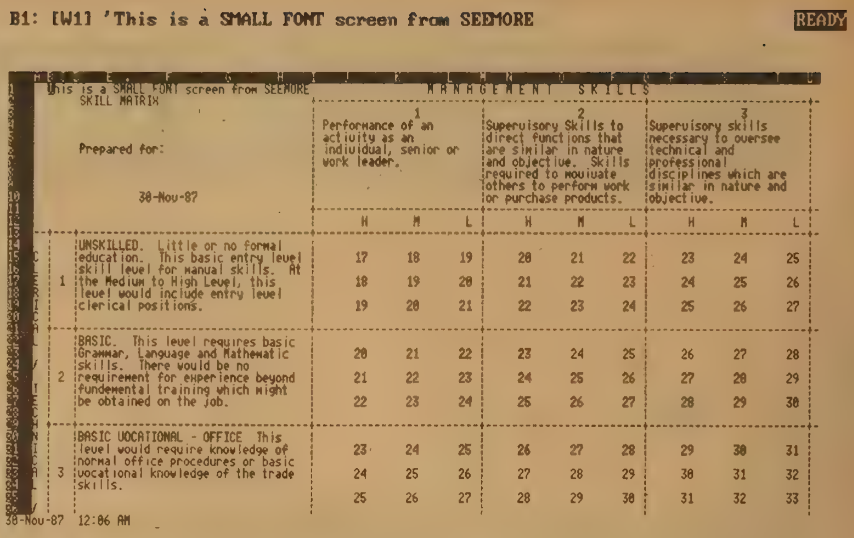


B1: [W1] 'This is a SMALL FONT screen from SEEMORE READY

This is a SMALL FONT screen from SEEMORE
SKILL MATRIX

Prepared for:

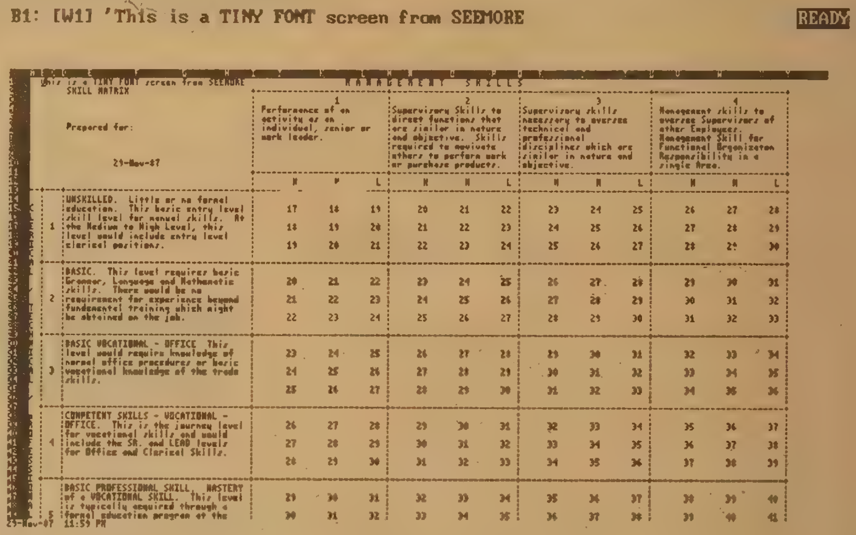
30-Nov-87

MANAGEMENT SKILLS

		1 Performance of an activity as an individual, senior or work leader.			2 Supervisory Skills to direct functions that are similar in nature and objective. Skills required to mouivate others to perform work or purchase products.			3 Supervisory skills necessary to oversee technical and professional disciplines which are similar in nature and objective.		
		H	M	L	H	M	L	H	M	L
1	UNSKILLED. Little or no formal education. This basic entry level skill level for manual skills. At the Medium to High Level, this level would include entry level clerical positions.	17	18	19	20	21	22	23	24	25
		18	19	20	21	22	23	24	25	26
		19	20	21	22	23	24	25	26	27
2	BASIC. This level requires basic Grammar, Language and Mathematic skills. There would be no requirement for experience beyond fundemental training which might be obtained on the job.	20	21	22	23	24	25	26	27	28
		21	22	23	24	25	26	27	28	29
		22	23	24	25	26	27	28	29	30
3	BASIC VOCATIONAL - OFFICE This level would require knowledge of normal office procedures or basic vocational knowledge of the trade skills.	23	24	25	26	27	28	29	30	31
		24	25	26	27	28	29	30	31	32
		25	26	27	28	29	30	31	32	33

30-Nov-87 12:06 AM

Illustration Three shows that worksheet at SMALL.



B1: [W1] 'This is a TINY FONT screen from SEEMORE READY

This is a TINY FONT screen from SEEMORE
SKILL MATRIX

Prepared for:

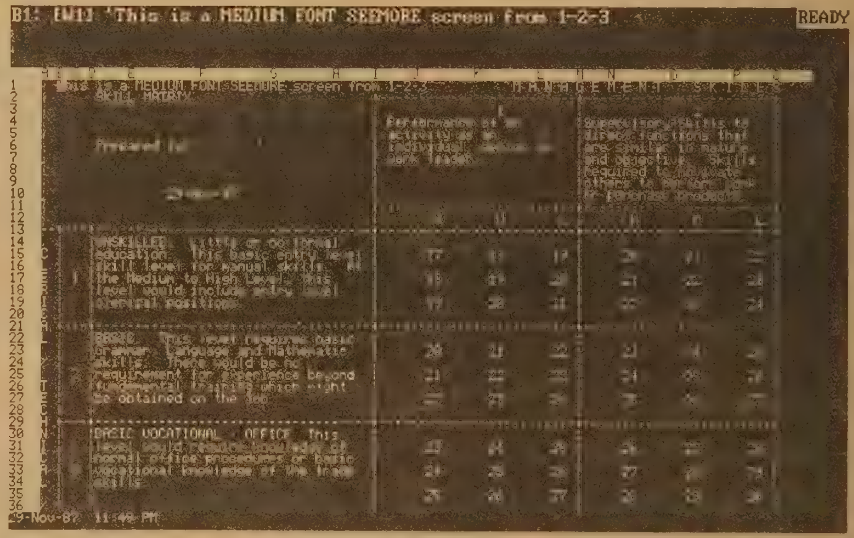
29-Nov-87

MANAGEMENT SKILLS

		1 Performance of an activity as an individual, senior or work leader.			2 Supervisory Skills to direct functions that are similar in nature and objective. Skills required to motivate others to perform work or purchase products.			3 Supervisory skills necessary to oversee technical and professional disciplines which are similar in nature and objective.			4 Management skills to oversee Supervisors of other Employees. Management Skill for Functional Organizaton Responsibility in a single Area.		
		H	M	L	H	M	L	H	M	L	H	M	L
1	UNSKILLED. Little or no formal education. This basic entry level skill level for manual skills. At the Medium to High Level, this level would include entry level clerical positions.	17	18	19	20	21	22	23	24	25	26	27	28
		18	19	20	21	22	23	24	25	26	27	28	29
		19	20	21	22	23	24	25	26	27	28	29	30
2	BASIC. This level requires basic Grammar, Language and Mathematic skills. There would be no requirement for experience beyond fundamental training which might be obtained on the job.	20	21	22	23	24	25	26	27	28	29	30	31
		21	22	23	24	25	26	27	28	29	30	31	32
		22	23	24	25	26	27	28	29	30	31	32	33
3	BASIC VOCATIONAL - OFFICE This level would require knowledge of normal office procedures or basic vocational knowledge of the trade skills.	23	24	25	26	27	28	29	30	31	32	33	34
		24	25	26	27	28	29	30	31	32	33	34	35
		25	26	27	28	29	30	31	32	33	34	35	36
4	COMPETENT SKILLS - VOCATIONAL - OFFICE. This is the journey level for vocational skills and would include the SR. and LEAD levels for Office and Clerical Skills.	26	27	28	29	30	31	32	33	34	35	36	37
		27	28	29	30	31	32	33	34	35	36	37	38
		28	29	30	31	32	33	34	35	36	37	38	39
5	BASIC PROFESSIONAL SKILL. MASTERY of a VOCATIONAL SKILL. This level is typically acquired through a formal education program at the	29	30	31	32	33	34	35	36	37	38	39	40
		30	31	32	33	34	35	36	37	38	39	40	41

29-Nov-87 11:59 PM

Illustration Four shows the total for TINY.



B1: [W1] 'This is a MEDIUM FONT SEEMORE screen from 1-2-3 READY

This is a MEDIUM FONT SEEMORE screen from 1-2-3 MANAGEMENT SKILLS
SKILL MATRIX

29-Nov-87 11:49 PM

Illustration Five shows the Medium screen printed in as a reverse screen.

screen combination. You are encouraged to run a .BAT file and invoke GRAFPLUS using a command line sequence.

All in all *SeeMORE* is a program which Lotus 1-2-3 should have already supplied. Since it is not there, *SeeMORE* is worth having. I cannot imagine not using it now that I have had it up for a few weeks.

I have run it on two different 386 based machines and on a 286 based machine. No problems.

SeeMORE has become a must-have utility for 1-2-3. If you work with spreadsheets you really should have it as part of your working environment. (Personics Corporation, 2352 Main Street, Building 2, Concord, MA 01742, 617/897-1575.) ☐

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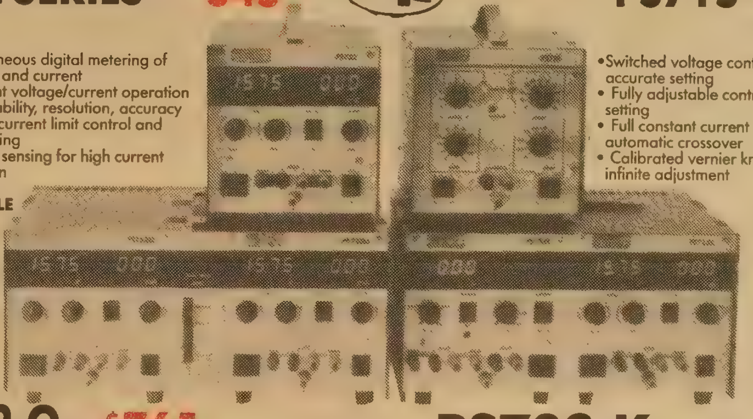

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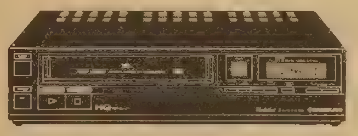

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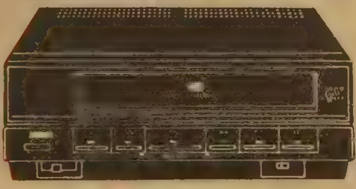

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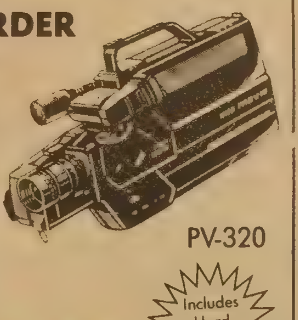

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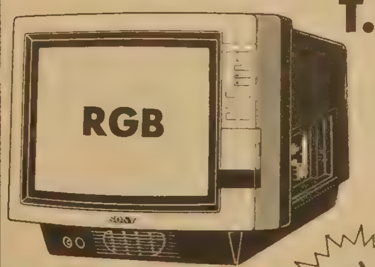

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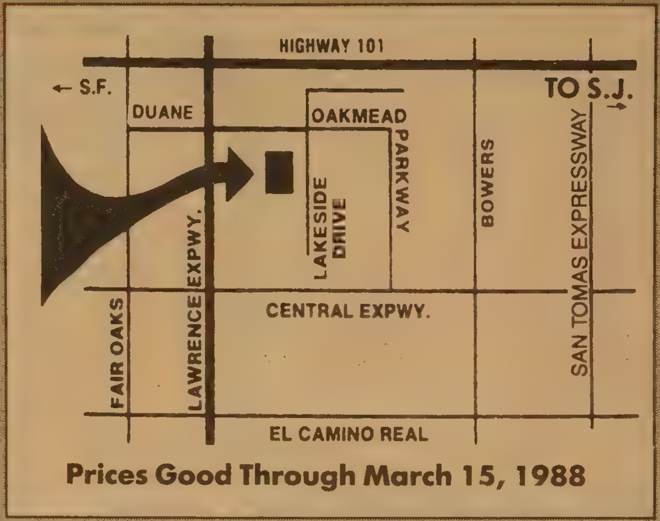

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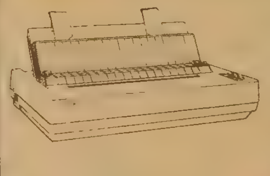

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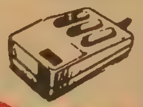

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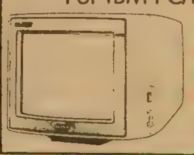

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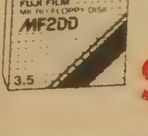

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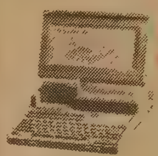

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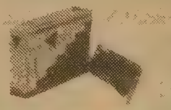

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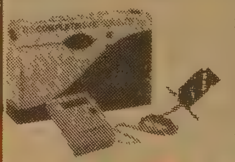

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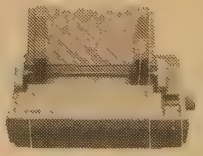

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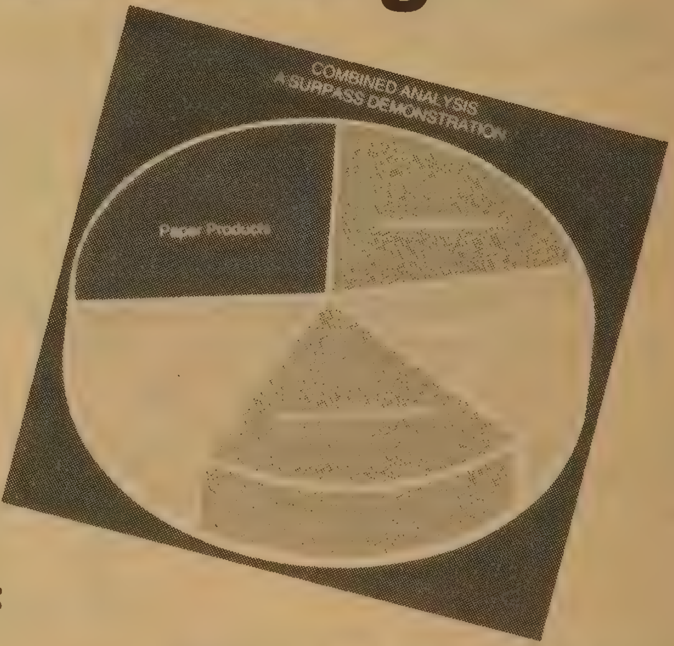

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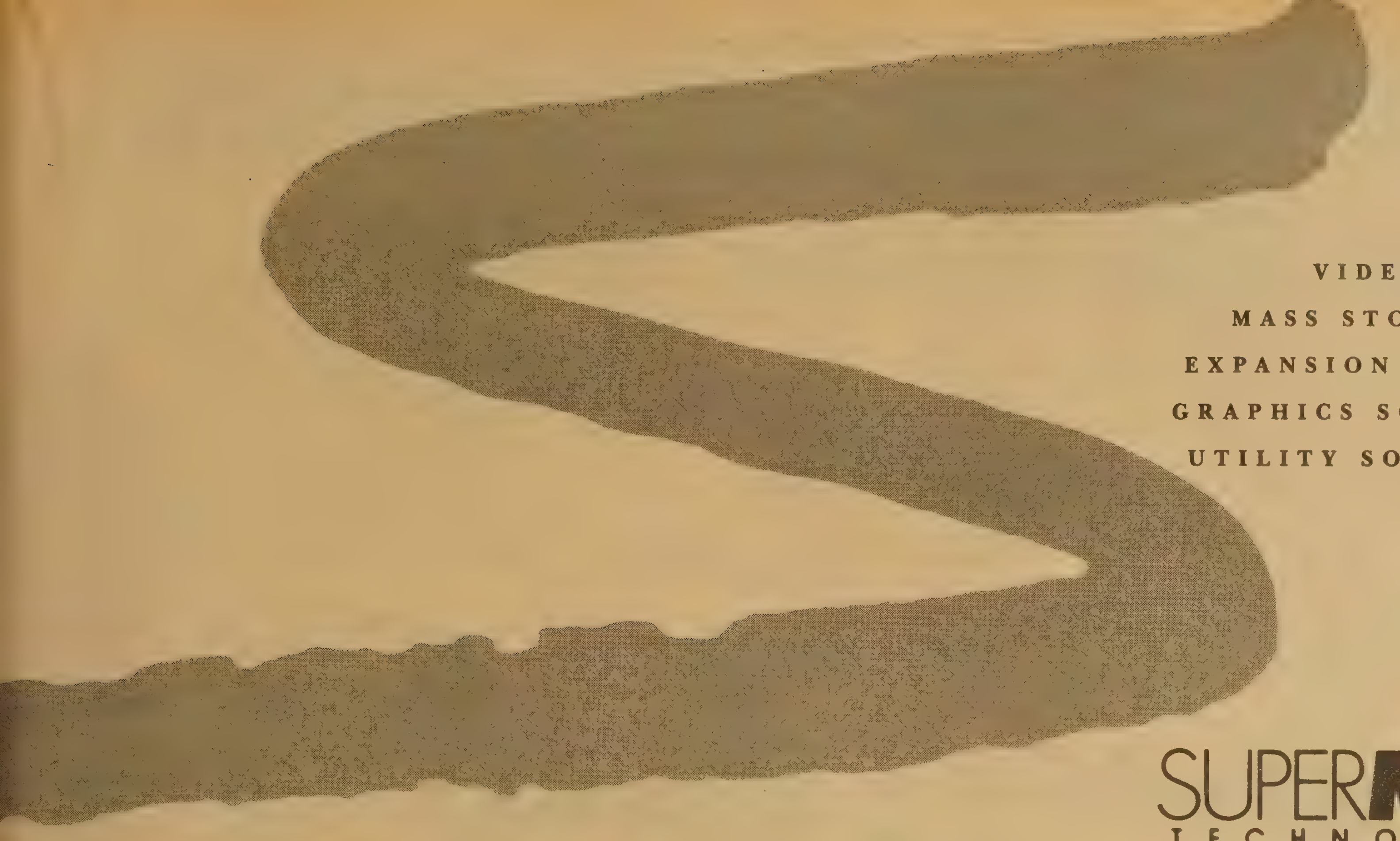

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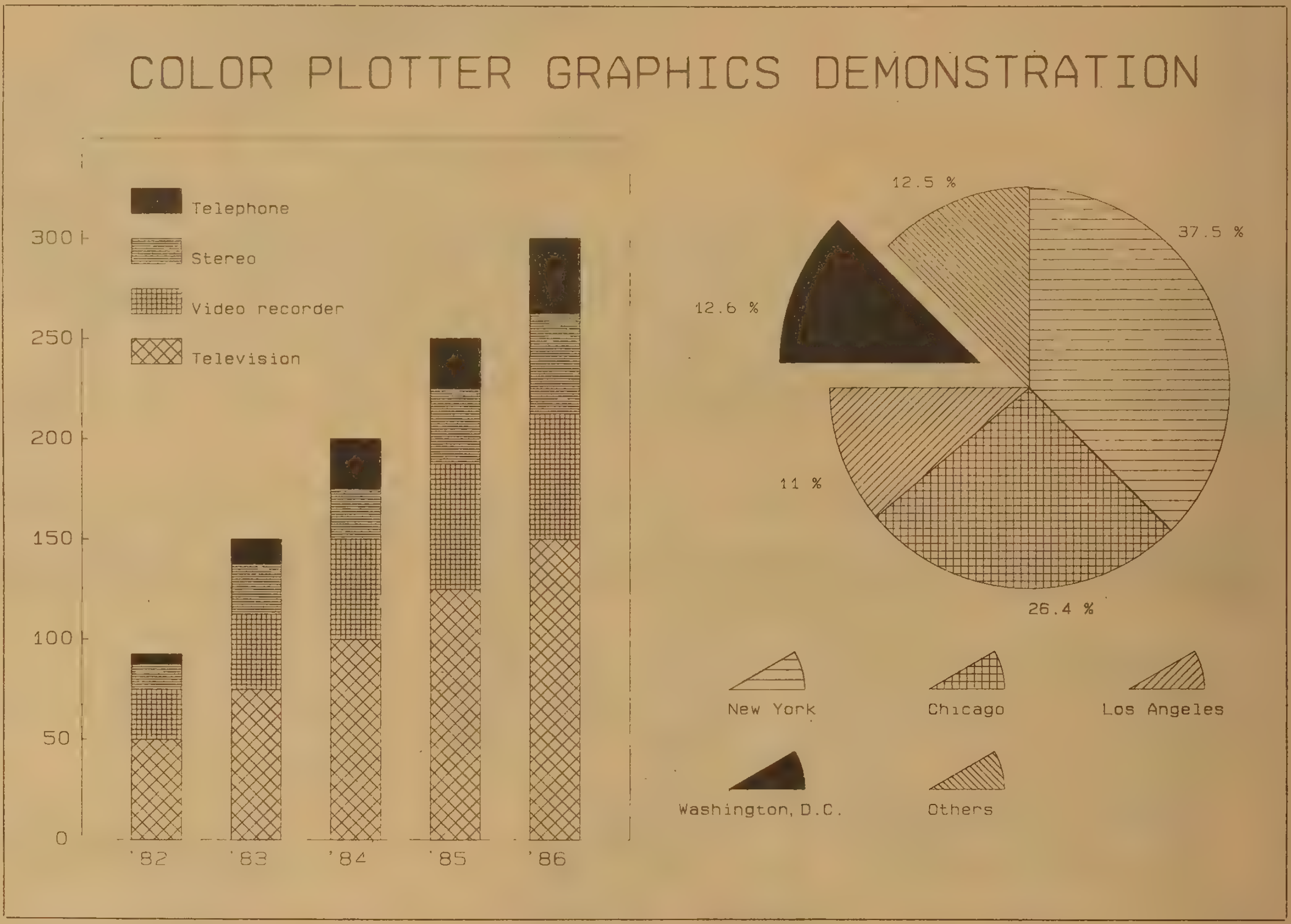
Fujitsu FPG-310 Color Plotter

By Woody Liswood

The people at Fujitsu say their color digital plotter is really an HP 7475A plotter, only better. But is it? It doesn't look like an HP plotter. It is quite a bit smaller. The price is also smaller — the FPG-310 retails at $1,200.

The plotter handles A3 (8½" x 11") and A4 (11" x 14") size paper. It will also handle paper down to the size, according to the documentation, of a postcard.

The resolution of the FPG-310 is .025 mm per step, a finer resolution than many of the plotters on the market which also emulate the HP line. The Fujitsu does not use the standard HP plotter pens; the company says the HP pens did not provide a fine enough resolution, so it had to make its own proprietary pens. (The pens, however, created the only problems I encountered in evaluating this unit.)



The Fujitsu FPG-310 offers high resolution and precision at a relatively low price.

A Few Minor Problems With The Pens...

In order to save weight (and probably expense in manufacturing), the plotter has a single motor to drive the paper movement mechanism as well as the pen carousel. Because everything is tied together, the pen carousel moves every time the paper moves. To keep the pens where they should be with all this violent motion, the carousel locks into position, rather than just sitting there as with most other plotters. This tends to be inconvenient; only after around thirty sessions with the plotter was I able to lock it in place on the first try almost every time.

Also, the pen capping mechanism doesn't work as well as it should. Rather than having rubber cups to keep air away from the pen points, the Fujitsu has indentations in the bottom of the permanent part of the carousel movement platform. I found that the transparency pens tended to dry out during use since they were not capped air tight while waiting their turn.

And, lastly, the pen holder is a plastic device which grips the pens by the middle. Since there is not a capping device on the pen to hold the pens at two points, the pens can easily be knocked out of the holder while you are inserting more pens.

Other than the problems with the pens, however, the plotter worked fine.

...But Great Overall Performance

The Fujitsu has some interesting features which make for ease of use.

The plotter comes with both a parallel and a serial interface. You do not need to tell it which one to use — the Fujitsu monitors both ports and uses whichever one becomes active first when the plotter is turned on. I tried both the ports and had no problems with either one; the plotter worked well with a SmartCable to monitor the serial interface. The Fujitsu can also be ordered with a GPIB interface, which conforms to the IEEE-488 standard.

There are three sets of DIP switches. One, located at the back of the plotter, controls the serial interface. The other two are located in the pen compartment on the plotter and are easily changed as needed. The left DIP tells the Fujitsu what type of paper is loaded and in what direction it is inserted. Also controlled are paper detection and the selection of a 1K or a 12K buffer. For some reason, the default setting on the buffer is 1K rather than 12K. The right DIP controls the changeable items for the serial port.

The paper feed mechanism is a dream to use. There are two pinch type rollers. The paper is rested against the rollers and a paper set button is pressed. The rollers then grab the paper and move it into position. From then on, the plotter controls everything. When the plot is finished, another press of the paper set button ejects the paper from the Fujitsu. The right hand pinch roller is movable so that you can work with various size papers.

The Fujitsu comes with two packages of pens, six for paper and six for transparency work. The package also includes 8½" x 11" and 11" x 14" inch plotter paper.

The FPG-310's manual is adequate. It is obviously a translation from Japanese and contains some very awkward phrasing. It does, however, tell you what you need to know. It is also illustrated with drawings on some important points, such as how to load the pen carousel and what the DIPs should be.

To really give the plotter a workout, I used it on a project which required over 150 graphs, created in *Freelance Plus*, to be plotted, both as transparencies and as paper plots. I created a batch file in *Freelance*, told it to pause at the end of each plot, and let it rip. No problems. All the graphs came out clean.

I found I had to change the pens after about 25 plots. I did use a lot of black, however. As mentioned before I also found that the transparency pens tended to dry out when left in the holder for more than an hour or so.

To test the repeatability of a plot, I repeated, without taking the paper out of the machine, a plot 10 times. There was identical registration each time.

I used the plotter with *Lotus 1-2-3*, *Freelance Plus*, *SuperCalc 4*, *Graphwriter* and *Energraphics*. In each program, I designated that I had an HP 7475A plotter. Again, there were no problems.

All in all, a good little plotter. If you want the versatility of an HP 7475A plotter, with very fine resolution pens and a moderate price, the Fujitsu is really an option you should examine. ☐

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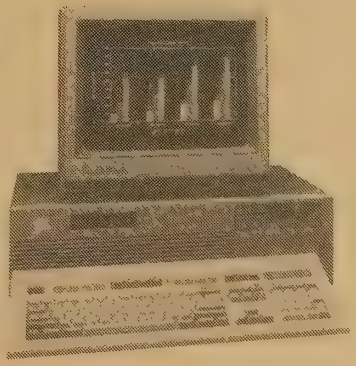

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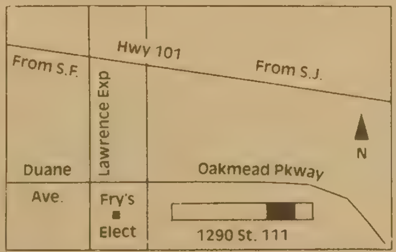

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The Cordata WPC Model CS 40

Functionality You Can Afford

By David Batterson

Another South Korean-made XT clone has joined the ranks of Leading Edge, Blue Chip, Epson Apex, Amstrad, Vendex, and GoldStar. The Cordata WPC Model CS 40 is another low-end (but good quality) PC for the home office, student, or for use at a company workstation. Cordata Technologies, Inc. (founded as Corona Data Systems, one of the first PC clone makers) markets the computers, which are made by Daewoo Electronics Co., Ltd.

The WPC CS 40 has a clean look. Instead of a separate monitor, it has the monochrome monitor (green) built into the main unit. It offers CGA graphics (providing 16 shades of gray) and AT&T 6300 support, which allows full 640 x 400 resolution for CAD/CAM use. This latter support is not offered as a standard feature on other IBM-compatibles.

There are the usual standard XT clone features, including a video port for color monitor. You get MS-DOS 2.11 (a little puzzling — why the old version?) plus the now-standard bundled software, including beginner's disk (*PC Pal*), *PC Tutor*, and an integrated package called *Electric Desk*.

PC users who have experienced fuzzy screens will be pleased with the excellent resolution. When I loaded my regular communications program, *ASCII Pro*, I re-installed it and changed the computer type. Instead of IBM XT-compatible, I switched it to AT&T 6300, which the Cordata can emulate.

ASCII Pro's Editor seemed to display the lines faster on the Cordata than it did on the Vendex Turbo-888-XT, which I reviewed recently for another publication. And the text is sharp and clear.

With many programs, like *ASCII Pro*, *Tracker* or *Electric Desk*, you can change the color palettes. Of course, with the Cordata, those "colors" are different shades of green. You can type with black on light green, light green on black, or other variations depending upon your personal choice.

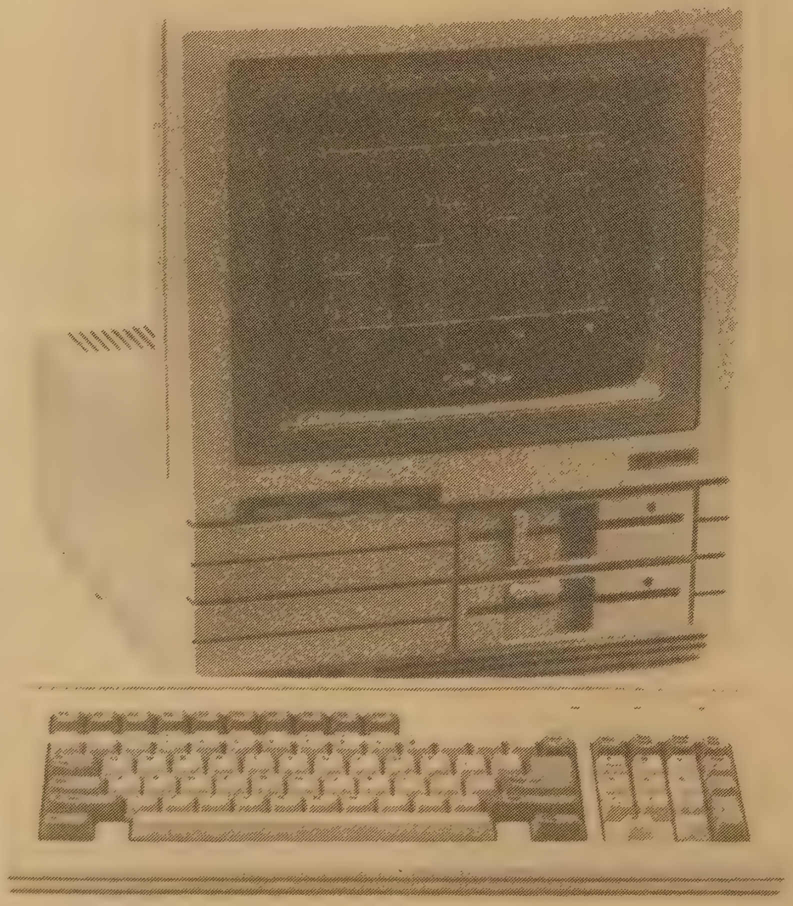
Setup of the Cordata is easier than hooking up a VCR. Plug in the power cord, cable your modem to the serial port, your printer to the parallel port, and plug the keyboard in the front socket. Make sure the monitor switch in back is set to MONO. The speed switch should be set to 8MHz already; if not, change it. Done!

You get the usual self-test upon booting, including display of speed selected. (If it says 4.77MHz, you switched it the wrong way!) You'll have to set the clock and calendar to correct time and date.

The first-time user should probably boot *PC Pal* at this point. It's a basic primer on the computer's parts and terminology, plus explanations of the keyboard, software types and BASIC. If you are switching from Apple, Commodore, etc., you can skip this disk, and instead look at *PC Tutor*.

This disk starts out with basic MS-DOS commands and explanations of FILESPECS, and continues into more complex areas. This is must reading if you are not familiar with IBM-type filenames. (One example of a proper filename, however — 4__SCORE.&7 — seems to be a bit off-the-wall. It is a legal name, but would not be commonly used by most, so it could be confusing to newcomers. They should have stayed with names like LETTER1.TXT or FUNGAME.BAS.)

Many users will never get into the more arcane areas of MS-DOS, such



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(*) 1,651 prime numbers found

David Batterson has been a freelance writer for many years, and was formerly a BBS co-Sysop. You may send comments to MCI Mail: DBATTERSON. *Copyright © 1988 by David Batterson. All rights reserved.*

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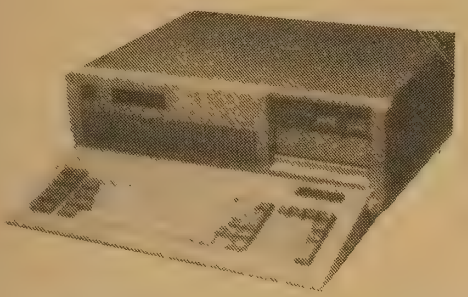

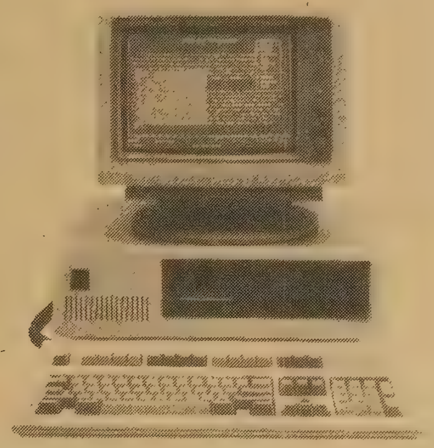

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as "REDIRECTION, FILTERS AND PIPES." But it is good that the explanations are here, and in the included MS-DOS manual.

Formatting, checking disks for errors, copying files, and similar commands are explained fairly well.

Although there is a standard 9-contact "D" video port for an RGB monitor, where would you put the monitor? Unlike most clones, the Cordata's monitor is part of the main unit. It is attached by four screws, but removing them would leave the frame in front still attached. Therefore, a color monitor might have to be put to one side. It's confusing, and there is no explanation. If you want a color monitor, you should ask the salesman about this first. (The actual viewing area of the 12" monitor is 10-3/4", by the way.)

Installation of adapters is explained and illustrated. It looks like a routine job. If you want to install an 8087 math co-processor, you should get some help if you are not familiar with this process.

You have a choice these days of a regular hard drive, or newer ones which are on a card. The Cordata does not come with a hard drive controller.

The 130-watt power supply could prove a bit skimpy as you add on, and you might want to replace it with a 150- or even 200-watt supply. Prices of these are dropping, just like drives, chips and printer paper.

The 512K memory can be upgraded to 768K. Your own needs will determine whether you should increase memory capacity. (Remember when we thought 128K was a lot of memory?) For most purposes, it will be fine. If you are into heavy desktop publishing, or are running memory hogs like *Symphony*, by all means get the extra 256K.

The CS 40 (main unit) takes up little desk space: 13.5"W x 14.5"D x 16"H. The keyboard is 16"W x 7.6"D x 1.34"H. Keep in mind when picking it up off a desk that you are lifting around 40 pounds, and that you cannot move the monitor and main unit separately like you usually do.

The keyboard feels better than many clone keyboards. It has a light touch, and the layout is standard. Function keys are across the top. LEDs for Caps Lock, Num Lock and Scroll Lock are in the upper right corner, instead of on the keys themselves. The backspace key is not conveniently located. (Use the CTRL + H instead for easy error correction).

What about *Electric Desk*? Not a bad name for it, since it is memory resident. You can switch back and forth among the integrated word processor, database, spreadsheet and modem program with ease (for instance, F10 + C moves you to the communications mode).

These programs are not top-of-the-line, but are definitely not public domain stuff either. The *Electric Desk* tutorial is optional via mail for $5; the new user could find it helpful. Otherwise, the manual and onscreen help files will familiarize you with all the features.

It is *very* important to follow the instructions for installation and configuration carefully, or it will not work properly. The disks are not copy protected, so you should make backups before you do anything with them.

The database and spreadsheet seem adequate for most needs. Using your modem with *Electric Desk* causes no pains, except for writing log-on macros. These are tricky, and unless you have some experience in this area, you might want to just dial manually. I got my MCI Mail number macro working after a struggle.

Both ASCII and XMODEM send/receive are supported. It's easy to upload a file after writing it in the word processor.

Writing is done in the Document Service. You can write up to 1000 lines without saving to disk, which is a *lot* of writing for a session. This is a basic vanilla word processor, but with nice features. Document Service has italics, bold, superscripts, subscripts, underline and other text types; these are indicated onscreen according to how you set this in the configuration. Italics might be shown in inverse, or simply in a different shade.

You can fix transposed letters like "incredibel" to "incredible" with the Ctrl + T. All caps/lower case can be done with Ctrl + C/Ctrl + L. Block moves and deletions are made easily, since they are held in memory, not on disk (unless you wish to save them).

Margin settings default to 5 and 75 each time you begin writing. These are *not* standard, and must be changed each time. Why those settings were chosen is a mystery. You can define a memory key (such a Alt + 1) to change margins, however, or store phrases (up to 1,000 keystrokes). These are real timesavers in typing your name and address in a letter.

Files are saved with the extension .DOC added to them (unless you use "Export" to save as a pure ASCII file, in which case it uses the .TEX extension). When you use the pop-up directory window, other files on your disk like ARTICLE.TXT or LETTERS.MOM) do not appear in the directory.

In such cases, you can select "Access DOS" and read your true directory. It slows you down though. Cursor commands in Document Service could also be improved: you must type End End -› to go to the end of a line.

Embedded formatting commands are also supported, to number pages automatically, create headers/footers, include a date or select compressed print from your printer, among other choices.

Cordata has put together an admirable package of software/hardware in the CS 40. It isn't "premium quality" but it's a fine clone worthy of your consideration. ☐

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The Sequencer

MIDI And The Macintosh

By Paul Craner

In our opening article on MIDI and the Macintosh (July 1987), we explored the concept of a musician's workstation: the creative environment for the cultivation and exploration of the musical arts. We outlined the kinds of software based "tools" such an environment must have, and how the Musical Instrument Digital Interface (MIDI), makes our workstation possible. In this article we look at the first of these applications, the sequencer.

The term "sequencer" is hardly descriptive of what this application is all about. When the Mac is up and running sequencing software, a comprehensive environment for expressing, manipulating, and performing musical ideas is available to us. The best sequencing software permits a musician to go about the business of making music in much the same way s/he has all along, while offering new insights and options which open up all sorts of possibilities. Inevitably, a musician will feel encouraged to explore his or her music in exciting and unusual ways, bringing the machine more "into focus" — allowing, even seeking out, its unique impact. Before turning to an analysis of sequencing, it will be useful to review and explore certain concepts underlying the "look and feel" of the Macintosh which are particularly important to our discussion of the musician's workstation as a whole.

Metaphors and Objects

All good applications on a Mac, including sequencing software, achieve their excellence through the use of metaphors. Such metaphors are typically based on objects in the "real world." This is fairly obvious in the case of a word processor, which uses a metaphor based on that venerable real-world object, the typewriter. The Macintosh Finder uses a metaphor based on another real-world object, a "desktop."

The concept of applications as metaphors for the real world, key to the success of the Mac, does not simply mean that the more like a real-world object, the better an application will be. A word processor that could only do what a typewriter does would be of limited usefulness. Similarly, we wouldn't find it terribly "friendly" if our Mac desktop needed the computer equivalent of dusting from time to time, (like the real-world desk I'm working at needs) or if our Mac's screen suddenly faded to black, because the system decided to emulate a desk-lamp light bulb burning out.

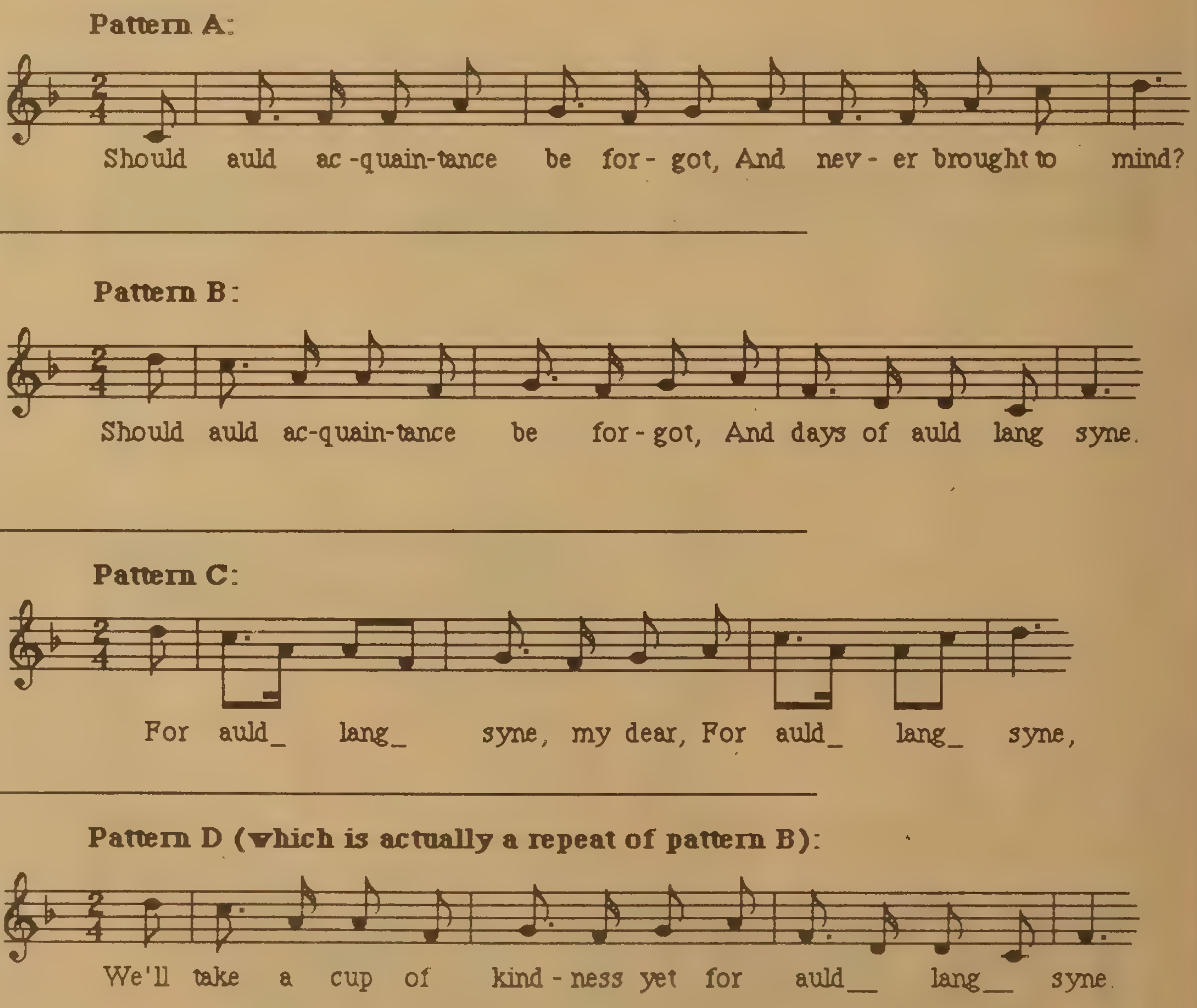
The metaphor must be consistent; it need not be literal. When a word processor allows the user to cut and paste text, insert graphics, or check spelling, its metaphor has moved well beyond the simple analogy of a single real-world object, the typewriter, to become the entire environment surrounding the typewriter's use in producing a document — including the computer equivalent of scissors, tape, and a dictionary. The clearly defined attributes of this "document producing environment" are the basis for a clearly defined application, the greatest strength of which lies in its logical and consistent use of that metaphor.

Predictability And Nonmodality

Different applications require different metaphors, and not all metaphors can be based on a literal analogy to a single object in the real world. But in every case, successful applications will reflect the single most important attribute of all real-world objects: it will "behave" in a predictable and nonmodal way, *just like objects in the real world do*. If I am sitting at a desk and drop my pen, it will always fall toward the floor. There is no sequence of actions I can take that will lead to the pen floating to the ceiling. Such is the predictability guaranteed by the laws of nature. While working at my desk, I do not need to stop what I am doing from time to time and enter a "phone answer" mode in anticipation of the phone ringing. I can answer or use the phone when necessary, while otherwise doing whatever else I choose to do. Such is the non-modality of normal experience.

Of all the many benefits an application gains from the use of real-world metaphors, predictability and nonmodality are the most important. By being predictable the application will respond exactly the same way given exactly the same circumstances. By being nonmodal the application will not arbitrarily restrict what and when actions can take place. The advantages of such consistency are manifold, and if held to throughout a range of applications, permit an important benefit: different applications will respond in similar ways given similar cir-

Figure 1. Component "patterns" from a verse of *Auld Lang Syne*


Pattern A:
Should auld ac-quain-tance be for-got, And nev-er brought to mind?
Pattern B:
Should auld ac-quain-tance be for-got, And days of auld lang syne.
Pattern C:
For auld_ lang_ syne, my dear, For auld_ lang_ syne,
Pattern D (which is actually a repeat of pattern B):
We'll take a cup of kind-ness yet for auld__ lang__ syne.

These patterns can be "linked" together into a song: A + B + C + B = One verse of *Auld Lang Syne*

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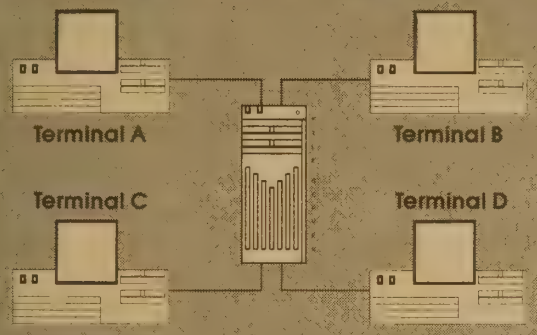

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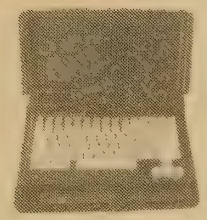

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cumstances, and will share a similar freedom from restrictions as to what and when actions can take place. This is precisely why a user can boot up a new Mac program and play with it before, if ever, reading the manual. Guided by a sense of the application's metaphor, the user can quite freely explore what the application does, already aware of how it should behave from experience with other applications.

The importance of such predictability and nonmodality cannot be overstated. If an object in the real world had the kind of unpredictable and restrictive character of some poorly written software, the results would be obviously absurd. If I purchased a new guitar, and that evening while I was happily strumming away, the instrument started to bark and tried to bite me, I would be astonished — to say the least. Knowing full well that guitars are not supposed to do that kind of thing, I would be no less surprised when after trying it again, my guitar talks to me as I try to tune the high E string, complaining, "You must be in 'tune' mode to adjust that string. You are currently in 'play' mode."

And so on. An application which behaves unpredictably, or has arbitrary restrictions on what and when actions can occur, is no better than a barking guitar.

Musical Objects, Musical Objectives

Fortunately, there are few "barking guitars" among the choices of sequencers available for the Macintosh. The rigors of capitalism, combined with the high expectations users have for most Mac applications, tend to weed out the "dogs." Nonetheless, some sequencers will meet a particular musician's needs better than others. Determining which sequencer will work best, though, is not all that simple.

It is not enough to tally a checklist of a sequencer's "features." A musician deserves to have whatever features s/he desires, but these features must be an integral part of an overall look and feel that is true not only to the Mac interface, but to itself — and to the creative process. Put in the language of the ideas presented above, an application's metaphor must be more than simply the logical sum of the objects it is based on. The structure and aesthetic of the sequencer must reflect and produce a creative environment for the musician to work within. This "music producing environment" directly determines the nature of a musician's creative process when using the workstation.

A musician may not be able to do something to and with a musical idea if the sequencer s/he is using is "ignorant" of the need or method for doing it. While such a limitation is unfortunate, it must be viewed in the context of the application as a whole. Some limitations are "more fatal" than others, some features "less essential." One well known package, until a very recent update, was "missing" the ability to loop regions of musical material. On paper, this seemed a fairly serious drawback to many musicians. They were accustomed to developing musical ideas against the steady reiterations possible with looping. Nevertheless, the aesthetic of the package was so conducive to music making (having a look and feel that was itself "musical") that it became the industry standard — even winning over those who still very much wanted the missing feature. It is worth noting that the newest version of the program implements the technique with a vengeance, and true to form, has set a new standard in what is meant by "looping."

> **The best sequencing software permits a musician to go about the business of making music in much the same way s/he has all along, while offering new insights and options which open up all sorts of possibilities.**

Tracks Vs. Patterns

The usefulness of a sequencer essentially comes down to how we get musical ideas into it, and how we can get at them once put there. How we get musical ideas into a sequencer depends largely on the object the sequencer "looks and feels" like, usually a tape recorder or a drum machine — sometimes a hybrid of both. The tape-recorder analogy is the most common for a sequencer; it is likely the most common object in a musician's world. The drum machine is familiar equipment only to a certain group of musicians, and not surprisingly, software modeled on that object appeals almost exclusively to that group, though there are always exceptions.

If an application uses the tape-recorder analogy, it typically lets us record our musical ideas as *n* number of tracks. A likely procedure would be to record some music onto track 1, then after "rewinding" record additional material onto track 2, and so on — much like the process of using a multi-track tape recorder. The way software modeled on a drum-machine treats our MIDI data is not so intuitively obvious. In such software, each phrase we record is a single element or pattern, which we link together with other patterns to form a "song." For example, assume I want to record *Auld Lang Syne* for my New Year's party, and that my sequencing software uses the drum machine analogy. I could record the first four-measure phrase and call it pattern A, record the next four-measure phrase, calling it pattern B, and finally the third, calling it pattern C. I notice that the closing four measure phrase of the song is melodically the same

Figure 2

The following table details the most common controllers by number and name. The MIDI command necessary to affect a given controller is also included for programmer types. Good sequencing applications normally shield the user from such low-level commands, requiring only a controller number and its value. Some go beyond even that, allowing the user to select a controller type by name and to graphically represent the values to be assigned, i.e., drawing a curved line to represent a change in volume.

Controller #	Type	MIDI command (in hex)		
	Continuous			
1	modulation wheel	B0	01	0-7F
2	breath controller	B0	02	0-7F
4	foot modulation	B0	04	0-7F
5	portamento slide	B0	05	0-7F
6	data entry slider	B0	06	0-7F
7	main volume	B0	07	0-7F
8	balance	B0	08	0-7F
10	pan	B0	0A	0-7F
11	expression controller	B0	0B	0-7F
96	data increment	B0	60	0-7F
97	data decrement	B0	61	0-7F
	On/Off (0 = off/7F = on)			
64	damper pedal (sustain)	B0	40	0/7F
65	portamento on/off	B0	41	0/7F
66	sostenuto	B0	42	0/7F
67	soft pedal	B0	43	0/7F
92	tremolo depth	B0	5C	0/7F
93	chorus depth	B0	5D	0/7F
94	celeste (detune) depth	B0	5E	0/7F
95	phaser depth	B0	5F	0/7F
	Channel Mode			
122	local control on/off	B0	7A	0/7F
123	all notes off	B0	7B	0
124	omni mode off	B0	7C	0
125	omni mode on	B0	7D	0
126	mono mode on	B0	7E	0-10
127	poly mode on	B0	7F	0

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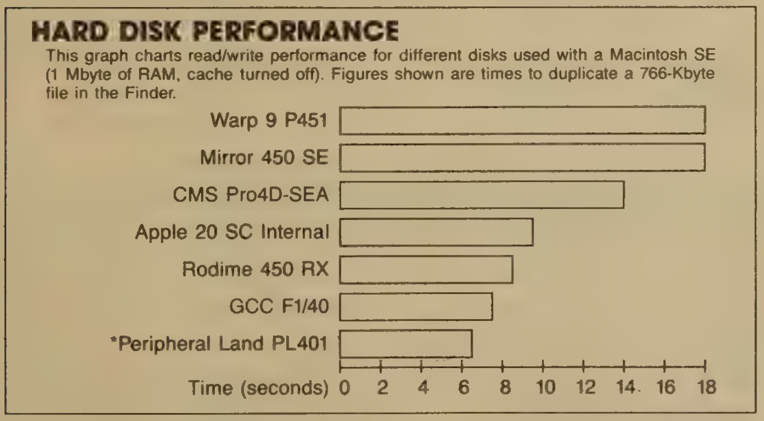

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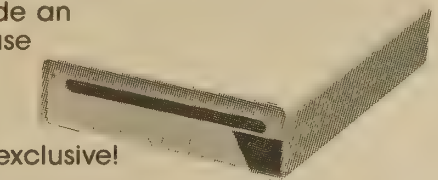

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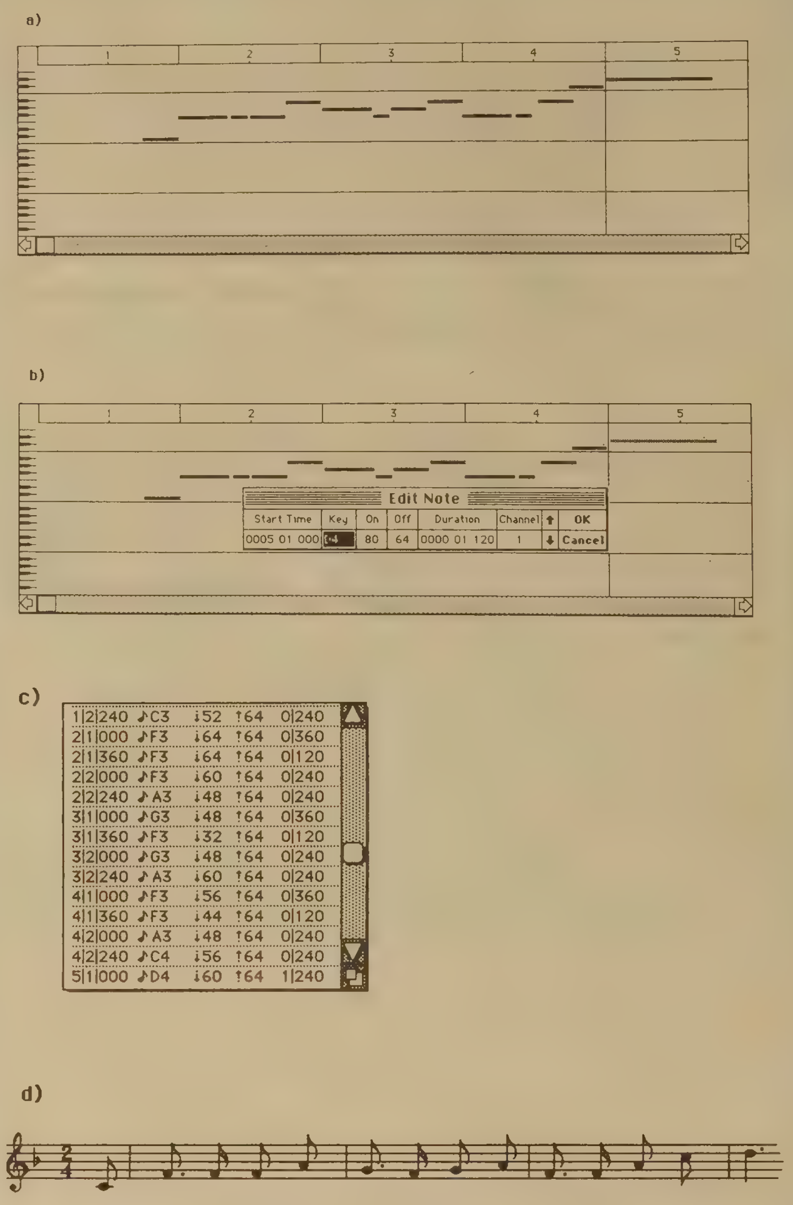
as the phrase I've labeled B, so I create the song by linking the patterns as A-B-C-B (see **figure 1**).

Figure 3. Representations of MIDI Note Events



Start Time	Key	On	Off	Duration	Channel	↑	OK
0005 01 000	D4	80	64	0000 01 120	1	↓	Cancel

```
1|2|240 ♪C3   ↓52  ↑64  0|240
2|1|000 ♪F3   ↓64  ↑64  0|360
2|1|360 ♪F3   ↓64  ↑64  0|120
2|2|000 ♪F3   ↓60  ↑64  0|240
2|2|240 ♪A3   ↓48  ↑64  0|240
3|1|000 ♪G3   ↓48  ↑64  0|360
3|1|360 ♪F3   ↓32  ↑64  0|120
3|2|000 ♪G3   ↓48  ↑64  0|240
3|2|240 ♪A3   ↓60  ↑64  0|240
4|1|000 ♪F3   ↓56  ↑64  0|360
4|1|360 ♪F3   ↓44  ↑64  0|120
4|2|000 ♪A3   ↓48  ↑64  0|240
4|2|240 ♪C4   ↓56  ↑64  0|240
5|1|000 ♪D4   ↓60  ↑64  1|240
```

Musical Ideas, Musical Ideals

Determining which approach of the two is best for a particular musician is also not so simple. While the object at the heart of a sequencer's metaphor will determine the general look and feel of the environment it creates, and hence how we get musical ideas into it, the programming skill of the sequencer's developer will largely determine what the application can "do," and hence how we can get at those ideas. But if we assume on the part of the developer the considerable skill needed to create a viable application, the factor which most affects how we get at the material captured by the sequencer is the developer's understanding of the most important object to be handled at our workstation: the musical idea itself.

While a musical idea is hardly an object in the sense that a tape recorder or a typewriter are objects, it is useful to understand a musical idea as a "thing" having certain well-defined attributes, all of which should be attended to by our sequencing software. Just as a good word processor uses the clearly defined attributes of a "document producing environment" as the basis for a clearly defined application, sequencing software (in order to realize the kind of creative freedom our workstation promises) must permit access to and representation of all attributes of the musical idea — and do so as part of a larger "music producing environment."

The attributes of a musical idea can range from the notes that make it up, to its relationship to other musical ideas; from the way it looks on a piece of manuscript paper, to the way it makes a listener feel. The MIDI specification itself defines a variety of *controllers* which ultimately have meaning only as attributes of a musical idea (see **figure 2**). Some attributes of a musical idea are beyond being quantified, but many can and should be both clearly represented and easily manipulated by sequencing software.

Music may not seem to have much in common with a business letter or a mailing list, but certainly we should be able to do with music at least as much as we can do with words in a document, or address fields in a database. Cut, Copy, and Paste type manipulation of music is an obvious need, as it is in a word processor. Extracting and compiling certain portions of musical material based on a explicitly defined set of criteria is as necessary to some composers as the ability to print out names from a mailing list by a range of zip codes is to most any business. Often the most fascinating attribute of a musical idea is apparent only after a precise criterion is used to relate the information it contains to itself. For instance, if our sequencer had the ability to search for an attribute like a repeating rhythmic pattern, we would have learned that our piece *Auld Lang Syne* repeats one rhythmic pattern throughout the entire song: a dotted eight, a sixteenth, and two eight notes.

Since there is no one right way to "think" about music, and since no one application can easily (if ever) accommodate the infinite varieties of musical experience and expression, musicians are very much at the mercy of the software developer. While what a talented programmer includes in a sequencing application might bring a composer a whole new insight into his/her music, what that developer might leave out will inevitably force a composer to leave something out of the creative process.

Representations

The developer's perception of a musical idea is directly reflected in the way his/her application permits the representation and manipulation of musical ideas. Though the musical idea is not an object in the real world the way a tape recorder is, the need for predictability and nonmodality in the computer controlled and generated metaphor for the musical idea is just as real. This becomes especially apparent when representing the musical idea. While graphic representations are intuitively quite easy to grasp, numeric representations tend to allow for greater (if more tedious) access to the attributes of a musical idea. We'll close with a comparison of these methods for "seeing what we hear."

Compare examples **a** and **c** in **figure 3**. Each represents the first four-measure phrase of *Auld Lang Syne*. In an example as simple as this, the "proportional notation" of example **a** seems ideal. We can generally see when a note event begins and ends, and what pitch it is. But we are denied the kind of information available in **c**, which also shows the attack velocity of the note (how quickly the key was pressed), and its release velocity (how quickly it was released). Further, if we assume a resolution of at least 240 divisions per quarter note, the graphic representation in **a** cannot easily show the difference between say a note lasting 235 "ticks" and one lasting 240) see the mini glossary for more on ticks and resolution).

On the other hand, it is difficult to see the melodic contour outlined by the notes in example **c**, a very important attribute of any musical idea. This contour is immediately apparent in the first example. A compromise between the purely graphic and the purely numeric methods of representation is displayed in example **b**, which brings up a numeric display by double-clicking on the graphically represented note. Here the idea is that the graphic environment is adequate for much of the work to be done, and if the detail of a numeric display is needed, it can be easily called up.

While this compromise works in some cases, in others it tends to be the worst of both worlds. For instance, there is no easy way to view the extra detail afforded by the "pop-up" window for more than a single note at a time. Trying to see the change of say attack velocity over the length of a phrase would be, at best, quite tedious in b, whereas in the purely numeric display, such information is readily apparent. There are probably better solutions to the lack of precise detail in a graphic display, but to remain true to the "look and feel" of a graphic display, the solution should somehow itself be graphic. Also, by setting up a graphic environment for manipulating musical ideas, but requiring a jump to a "numerical mode" for the kind of detail ultimately necessary, is to introduce a modalism that should, as we have said, be avoided.

And what about example **d**? Why not just represent the phrase the way music is usually represented? Transcription and notation will be the subject of our next article, but in relation to the representation of musical ideas discussed above, we can say this: traditional notation is wholly inappropriate. The symbols of musical notation are rich with connotations from centuries of common-practice, and they assume, indeed require, an additional element to be of value: the interpretation of a musician. A quarter note is less a representation of what has been played than an instruction on what to play.

Musical notation has little in the way of truly objective constants. In a MIDI sequencing environment, it is necessary to accurately see what we hear, so that we may precisely manipulate what we see. When finally we hear what we want, and wish to turn from our obedient boxes of sound to the human circle of interpretive performance, then we cast the music into the symbols of common-practice notation. But not without some effort, as we shall see. ☐

Copyright © 1988 Paul M. Craner. All rights reserved. *Paul is president of CranerMusic, a San Francisco based developer of software tools for the musical arts. He currently teaches a class on digital synthesis at San Francisco State University, and can be reached on CompuServe at 70651,44.*

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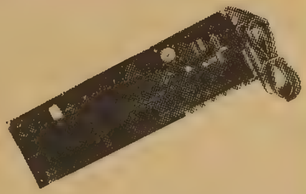

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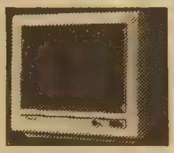

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MAC-PC CONNECTIVITY

Throwing The First Ropes Across The Chasm:

Networking Macs And PCs

By Robert Beauchamp

The aim of this new column is to bring to light various ways to bridge the gulf that lies between the MS-DOS world of the PC and the world of the Macintosh. It's a sometimes-perilous task — there are many paths which may be taken, some of them promising, none perfect.

At the end of each path is a bridge that offers itself as the solution to the Mac to PC connectivity problem. Whether that bridge is the best solution and whether it will remain the best solution in the future are questions this column will attempt to answer.

PC And Macs: Why Connect?

If you were to go into a computer store that was both an authorized Apple and IBM dealer (good luck), and had lots of money to spend (more good luck), they could set you up with a pretty nice networked system that would let you take advantage of the best features of these two incompatible machines. You could take your Mac IIs, SEs, IBM PS/2s and new Apple LaserWriter back to the office and have a field day.

Chances are, however, that your interest in connecting Macintoshes to PCs has less to do with an inspired grand design than simple necessity. Macintoshes seem to have a way of sneaking into offices of key people, who then want to connect up with the rest of the company. MS-DOS machines, due to their expandibility and compatibility with a vast installed base, never seem to lose their functionality. There's no point in throwing away an old PC when you can inexpensively upgrade it.

People who take their work home with them face the same problem. They may have just purchased a snazzy PS/2 and their office goes Macintosh a month later. Or a person might have had a Mac at home but needed to buy a PC to be compatible with the workplace.

Regardless of the specific problem, Mac-to-PC connectivity has become a major issue. John Sculley has even gone so far as to say that Apple's future depends on connectivity.

We have assembled a test system which we feel will present issues that are fairly typical of those found in the average home or office. It consists of an Apple Macintosh Plus with a 60 MB hard drive and a Club AT 286 PC clone with a 20 MB hard drive, NEC Multisync monitor, EGA card and Microsoft Bus Mouse.

The next step is to throw the first rope across the chasm and connect these two machines with a network. To do this we'll employ the TOPS networking system from Sun Microsystems.

> **One of the major advantages of TOPS is that it lets you share files on a network while still maintaining the individual integrity of each PC on the network. Each node can act as both a client or a server.**

The First Rope: Installing A Network

TOPS is an excellent choice for networking Macs and PCs together as it is specifically designed for that purpose. With TOPS you can also network with Sun workstations. The goal of TOPS is to allow you to access files stored on an incompatible machine. This way you can take a document that has been produced in a word processor on a PC and put it into your page makeup program on a Mac. Conversely, spreadsheet files produced on a Mac can easily be transferred to the PC.

There are two major components to a network. One is the hardware that physically connects the computers, and the other is the software that runs the network. Connecting Macintoshes to a network is relatively easy because Apple included all the networking hardware inside the Mac. All you need to do is connect the Macs together through their printer ports using AppleTalk connectors and cables.

IBM compatibles and clones, however, require a special card that allows them to run on a network with Macintoshes. The TOPS FlashCard is an example of such a card.

Installation of the FlashCard will be the most difficult part of setting up a network. If you have other cards in one or more of your computer's eight expansion slots, you may have to reconfigure your other expansion cards or the FlashCard due to conflicts in the DMA, IRQ and I/O address settings. There is a whole section in the FlashCard documentation that tells you about known conflicts the FlashCard will have with other expansion boards.

For example, if you have a Microsoft Mouse Card on your PC AT, as we do, the FlashCard documentation points out that the interrupt jumper on the Mouse Card must be set to use IRQ 5. In order to do this, you must take the mouse card out of the machine, check the manual, and determine which jumper on the card is for the IRQ setting. You then set the jumper as prescribed. Since the mouse card documentation is clear this should not be a problem.

On the other hand, if you have a PC, PC XT or compatible, the FlashCard documentation tells you to change the jumper *on the FlashCard* to use interrupt 3.

If you're having problems, there is also a section of the manual on troubleshooting. This section offers several helpful suggestions and, as a last resort, the number of TOPS technical support.

After you have installed the FlashCard into an expansion slot and configured the other cards, you will have to install the FlashCard driver. The driver is software that allows MS-DOS application programs to make system calls to send data out over the network. In order for your PC to interface with the network you need to install this driver.

Installing the driver involves two steps. The first is to copy the file ATALK.SYS, provided with the FlashCard, onto the root directory of the boot disk. The second is to add a line to the CONFIG.SYS file on your boot disk.

All those out there who could add a line to their CONFIG.SYS file, without looking at their DOS manual raise their hands....At this point the documentation truly fails the user. The documentation tells you that you must do these tasks, but it does not tell you how to accomplish them. While anyone with a rudimentary knowledge of DOS will be able to copy a file onto a root directory, not nearly as many people will as easily be able to add a line to their CONFIG.SYS file.

For those who didn't raise their hands, here are the few lines you need to know to add the correct line to your CONFIG.SYS file. The DOS utility you'll be using is called EDLIN.

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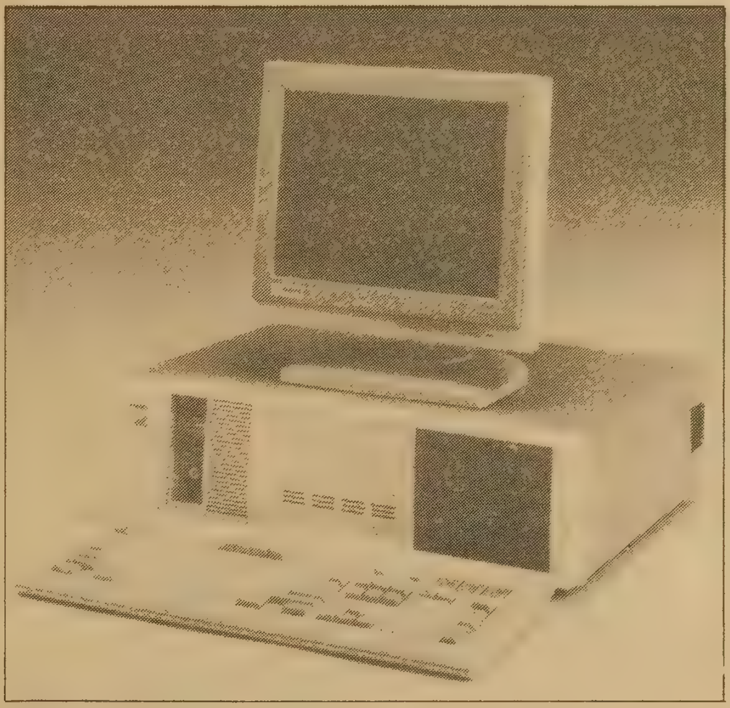

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At the DOS prompt of your root directory type:

EDLIN CONFIG.SYS

Your screen will then look like this:

End of Input File

*

At the asterisk,which is the EDLIN prompt, type:

I and press **Return**

This invokes the Insert Line command. Your screen will then show **1:***

At this point you can insert the line that FlashCard requires. At the EDLIN prompt type:

DEVICE = ATALK.SYS then press **Return**

Depending on the configuration of your FlashCard, you may also have to add an option to the end of the line. These options are listed in the FlashCard manual.

At the EDLIN prompt press **F6** and press **Return;** this will exit you from the Insert Line command. At the next EDLIN prompt type:

E and press **Return**

This saves your edits and returns you to the DOS prompt. If you made a mistake and don't want to save your edits type **Q** (for QUIT) and press **Return.** You will be asked if you want to abort the edit. Type **Y** and press **Return.** This will put you at the DOS prompt without saving your edits. It's a simple enough procedure if you know how, and should have been included in the documentation.

Installing PhoneNET

On the back of the FlashCard is a DB-8 connector plug. The DB-8 connector is the standard connector for networks with Macintoshes on them. It is also known as an AppleTalk connector plug. To connect the Macintosh and PC, you plug an AppleTalk connector into the printer port on the Mac and the DB-8 plug on the FlashCard.

> There are two major components to a network: the hardware that physically connects the computers, and the software that runs the network. Connecting Macintoshes to a network is relatively easy because Apple included all the networking hardware inside the Mac.

The PhoneNET system from Farallon Computing (415/849-2331) includes these connectors and sections of standard phone wire. You can get PhoneNET under a different name directly from TOPS. Each connector on the Farallon system includes two standard phone jacks. You connect the computers on the system by daisy-chaining them together with the phone wire. PhoneNET offers a variety of network configurations. Due to its low cost per node, it especially useful for small networks.

TOPS Software

If installing a TOPS FlashCard is the Mr. Hyde of networking, installing TOPS software is the Dr. Jekyll. Installation instructions are clear and take little time to implement.

One of the major advantages of TOPS is that it lets you share files on a network while still maintaining the individual integrity of each PC on the network. Each node can act as both a client or a server. As a server you choose those files you wish to make available to the other computers on the network. As a client you choose among those files on the network.

There are separate software packages for each type of computer on your network. TOPS is available for Macintosh, IBM PCs, XTs, ATs and compatibles and Sun workstations. TOPS requires you to purchase a software package for each node on the network.

It's definitely worth your while to try to install a network by yourself. Mastering your computers is one of the best examples of "learn by doing." If you don't wish to take the self-improvement route, however, you might consider having a professional computer service person install your TOPS hardware. The service person will then be able to give you a complete report on the settings of your expansion boards, making future add-ons easier.

Now that you have thrown the first ropes across the chasm and are on your way to bridging the gulf between Macs and PCs you can start to explore the many features of TOPS. In next month's column we'll explore some of these features, and also delve into file transfers between Microsoft's *Word* and *Excel* programs. (TOPS, 415/549-4900) ☐

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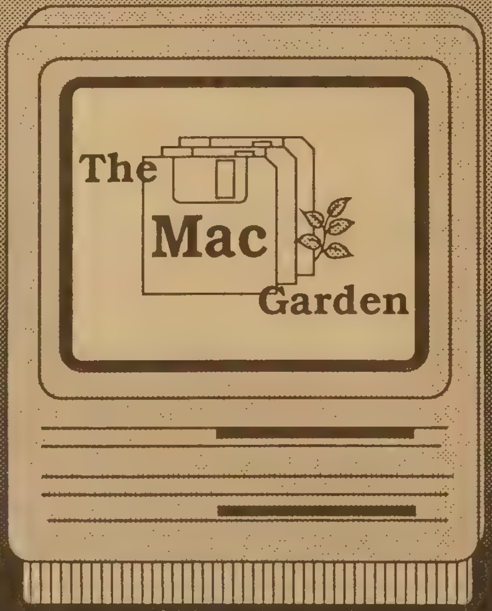

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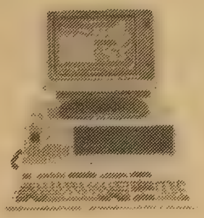

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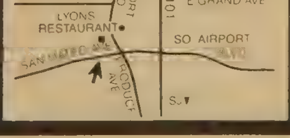

TELECOMMUNICATIONS

Twenty Minutes Into The Future

The Nose Of The Camel Is In The Tent

By Brock N. Meeks

The Max Headroom television show portrayed a stark view of the world "Twenty minutes into the future." Max was right on concerning many issues confronting users of telecommunications. He was more than "dialed in," he was, quite literally, *online*. There was much to be learned reading between Max's s-s-s-stuttering quips. But did we look hard enough? I don't think so.

One of Max's favorite targets were the "networks," those all-powerful purveyors of both programming and politics. In one particularly stunning line Max proclaimed, "The Networks are the government." He wasn't kidding.

For Max, "life, love, and the pursuit of happiness" were melded to a computerized high-tech world (in which telecommunications were simply a given). To distinguish between the two was tantamount to sacrilege. It was (is?) a world where First Amendment rights were the exclusive prerogative of network (government) programmers. After all, in the world of Max Headroom, the television had no on/off switch. In other words, "When on/off switches are outlawed, only outlaws will have on/off switches." And they were.

Only futuristic drama you say? Not so fast.

On January 31 of this year the Office of Technological Assessment (OTA) issued a stunning report looking at the meaning and scope of the First Amendment to the Constitution on freedom of speech and the press as related to science and technology. Rep. Robert Kastenmeier (D-Wis.), Chairman of the House Judiciary subcommittee on Civil Rights, whose committee requested the study, said that the report makes it clear that the challenge of the nation's third century will be to "fuse the basic rights of free speech and a free press with a wide range of rapidly developing technologies which elude traditional definitions and means of protection."

Width And Breadth

I sat in on the dog and pony show the OTA tried to call a "panel discussion" that eventually led to this report. It was titled: The Future of the Press and the First Amendment. Impressive topic, unimpressive responses.

A blue-rinsed matron sat before a panel of three-piece suits and law degrees and tried to understand "the medium"; the world of "computer mediated discourse" was lost among the pretensions of Washington politicos.

Out of that panel discussion, the OTA hammered the report they issued on January 31. The upshot: that these new technological developments in broadcast and electronic media will force a redefinition of First Amendment guarantees of free speech and a free press. At least they got that right.

My first dismal impressions were wrong. Somebody at the OTA did their homework. The folks in Washington, though they don't understand the full implications of these technologies, understand that a debate is emerging over how to strike a "delicate balance" between individual rights of free expression and the national interest.

The OTA report says that satellites, computers, electronic bulletin boards, telex, videotext, and other new ways of gathering, editing, and delivering news are blurring legal and regulatory distinctions between common carriers and the press. This changes arguments about the constitutional rights that each enjoys. As these technologies overlap and intertwine, the OTA report says, so do the set of rules most appropriate for the hybrid media of the future.

The report goes on to hit where most of us live (online): electronic bulletin boards. The meaning of a "free press" should expand to accommodate these new forums of "free speech" that are continuing to challenge the traditional concepts of personal privacy, editorial responsibility and media liability. The report says of BBSes that they can be considered "many-to-many" *news channels* (my emphasis), where no identifiable publisher can be held accountable for content as is the case with traditional print or broadcast media.

What does all this mean for you and me? The report spells it out in a chilling sentence: "[T]he First Amendment will have to be reinterpreted in response to almost certain challenges of the government's right to regulate access to the media and ownership of new media outlets."

The key phrase there is "almost certain challenges of the government's right to regulate access." You've read about this right here in this column; the nose of the camel is in the tent. Need more evidence? Read on.

Commies At Our Doors

The report says the government also will be concerned about use of the new forms of media for the involuntary transfer of sensitive technology to potentially hostile nations. Some officials believe new restraints might be necessary to protect technological information; others say freedom of speech and of the press may already have been compromised, the report said.

This all comes about when the discussion of information flow centers on the scientific community and the free flow of information within that community. The report fully acknowledges that the freedom of speech and the press is constrained by national security and other restrictions (trade and export, for example). The concept of national security has been broadened beyond protection of weapons systems to include protection of technological innovations and industrial competitiveness.

Boiled down, that means national security has extend to, simply, information. And more and more that means information stored online, reachable via some online database.

Is this beginning to sound like information age rhetoric to you? If you'll remember, this column addressed the now infamous "Poindexter directive" that brought this situation to light. Although the Poindexter directive was indeed rescinded, that was only a symptom of a more insidious thread: National Security Decision Directive (NSDD) 145. This document (which is still in effect) created a new security classification called "sensitive but unclassified." It stems from the government's paranoia that, somehow, computerized information systems are an open invitation to "hostile" nations to rape and pillage our most cherished technological advancements.

Although White House chief of staff Howard Baker promised to have NSDD 145 reviewed, he didn't give any specific time frame for the review to take place. And with Irangate, the Persian Gulf, and a budget-busting deficit dogging the current Administration, it's unlikely that NSDD 145 will get any kind of top priority.

Freedom Of Electronic Speech

Basic rights of free speech are not absolute. The Supreme Court will, when pushed, balance the rights of the citizenry to express themselves freely against "national security" interests of the State. And those "interests" don't stop at the munitions factory door. They extend to inventions, technological research, university research funded by the Department of Defense, and scientific data, too.

The report concludes that free speech and a free press are among the most fundamental and essential conditions for preserving democratic government; the Supreme Court has accorded them a preferred position in any conflict. However, as pointed out above, that position is anything but a given.

Clearly the Congress has an essential role in preserving some kind of balance. The question remains, however, just how much of a balance can be reached? Perhaps "compromise" is a word better used. But compromise scares me.

It's clear that the OTA sees forums such as BBSes and The WELL as "news" media, and, by

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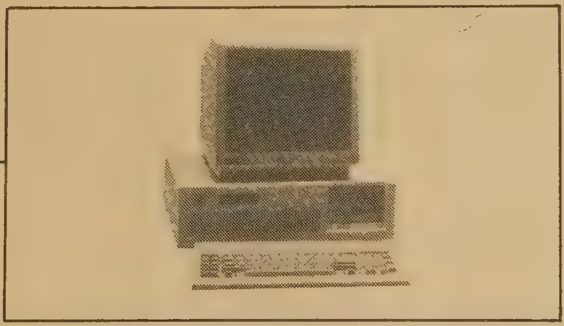

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extension, so will the courts. Will sysops, then, be responsible for the content in their newly appointed roles as "publishers" and therefore open to scads of governmental regulation? (The spectre of the FCC looms once again.) Moreover, because these electronic forums (which I once innocently referred to as "electronic soapboxes") are considered, by the OTA, as two-way publishing media, each of you who contributes to an electronic forum might be held liable for any and all comments you enter, up to and including the *validity* of those comments. One typo and…well, you get the picture.

And, if this report is correct, it is the State that will step in and see to it that some kind of regulation is indeed, placed on what we can say, how we say it, and where the responsibility for it lies.

The report ends with the recommendation that Congress provide a formulation of public policy and that these new forms of media be controlled by the oversight of executive agencies. (The Office of Bulletin Board Systems, perhaps?)

The Electronic Edge

To date, there is no legislation, either at the federal or state level, which even attempts to define or protect what we say online. And if federal legislative tradition continues, it will take the efforts of state legislatures to prod the Washington bureaucracy into action. This is exactly the pattern that led to Congress finally adopting some kind of formal computer crime legislation.

All is not lost, however. Like the cavalry arriving in some B-grade western, there is a bill in the California legislature which, if it passes committee, will give this nation its first assured "freedom of electronic speech" law.

> **To date, there is no legislation, either at the federal or state level, which even attempts to define or protect what we say online. And if federal legislative tradition continues, it will take the efforts of state legislatures to prod the Washington bureaucracy into action.**

The bill (ACA-36) is sponsored by Assemblywoman Gwen Moore (D-LA). It's billed as an "information age 'Bill of Rights.'" According to Bob Jacobson, principal consultant to the Assembly Utilities & Commerce committee: "ACA 36 was voted on for the first time in April 1987 by the Assembly Utilities and Commerce Committee, where it passed on a bipartisan 11-0 vote. However, in August 1987, the Assembly Elections, Reapportionment, and Constitutional Amendments Committee defeated ACA 36 on a 4-3 vote, with the three Republican members present all voting 'no.' The Assembly Elections Committee, on appeal by Assemblywoman Moore, rescheduled the bill for a January 1988 rehearing."

The bill is languishing in committee, despite virtually no opposition. Here's the legislative digest:

"The California Constitution guarantees the freedom to speak, write, and publish on all subjects and prohibits abridgement of the liberty of speech or press.

"This measure would guarantee the right to electronically communicate on all subjects and would provide that a law may not restrain or abridge liberty of electronic communications.

"The California Constitution also guarantees the right of the people to be secure in their persons, houses, papers, and effects against unreasonable seizures and searches. A warrant may not issue unless it particularly describes the place to be searched.

"This measure would specify that personal information stored in electronic information systems and computer databases is included in the search and seizure guarantees."

Later this month ACA-36 will be voted on again. Don't let the opportunity to make your voice heard slip away; don't let the "twenty minutes into the future" scenario detailed by Max Headroom and foreshadowed by the OTA report become a reality.

To act on ACA-36 write to:

Assembly Elections Committee at the State Capitol, Room 5119, P.O. Box 942849, Sacramento, CA 94249-0001.

Peter R. Chacon, Chairman (D-San Diego)

Richard L. Mountjoy, Vice-Chairman, (R-Arcadia)

And for a look at "what might be," the OTA report is available for $3.50 from the Government Printing Office, stock number 052-003-01090-9. ☐

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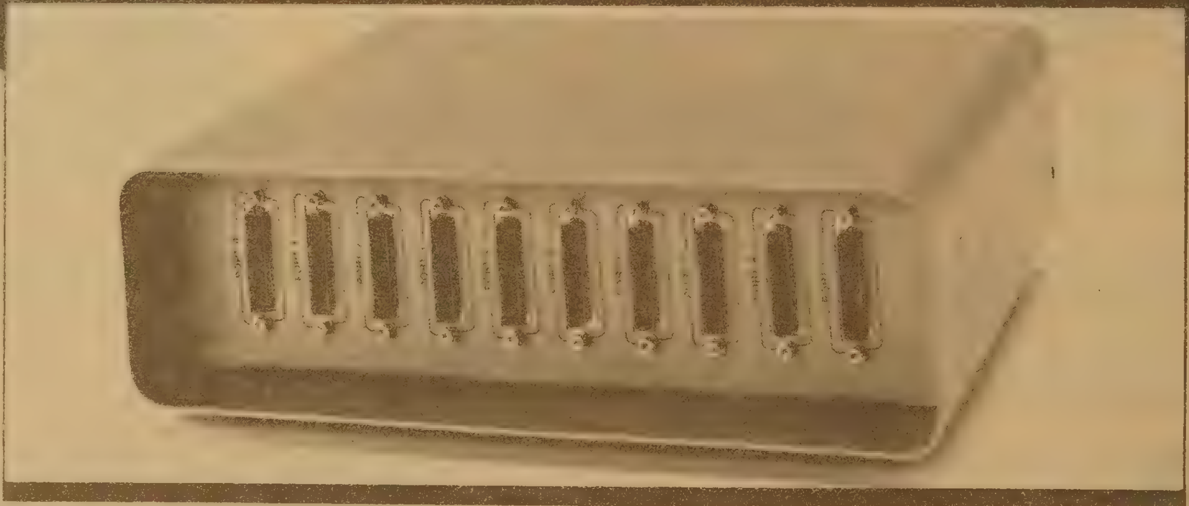

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September, 1752 And Other Temporal Concerns

By Bennett Falk

"Cal" is a UNIX utility that prints out a calendar for any specified month or year. It could hardly be easier to use; simply type "cal 1988" to see a complete 1988 calendar. To get a calendar for a specific month in 1988, simply insert the number of the month: "cal 11 1988," for example, would produce a calendar for November of 1988.

The most common pitfall in using "cal" is failing to specify the year by all its digits. The command "cal 88" is legal, but prints out the calendar for 88 A.D. and not for 1988. "cal" will produce calendars for any year from 1 to 9999.

Of course it's great fun printing calendars for interesting historical years, and sooner or later one gets around to printing the calendar for 1752. That year's calendar looks perfectly normal except for the month of September, which is missing 11 days and looks like this:

```
     September 1752
 S   M  Tu   W  Th   F   S
     1   2  14  15  16
17  18  19  20  21  22  23
24  25  26  27  28  29  30
```

The thoughtful user will immediately check the manual entry for cal looking for an admission of some bug in the algorithm that produces the calendars, but the manual says only: "The calendar produced is that for England and her colonies. Try September 1752."

The Gregorian Calendar Meets The Church Of England

At this point it may be helpful to supplement the UNIX Manual with a few pieces of general knowledge. The calendar used in Europe and the Western Hemisphere is basically the Gregorian calendar, promulgated by Pope Gregory the XIIIth in 1582 to replace the Julian calendar, which, at the time, had become ten days out of phase with the relative position of the earth and sun. The distinguishing feature of the Gregorian calendar is its special handling of centenary years: only those centenary years evenly divisible by 400 are treated as leap years. Other centenary years have only 365 days.

In 1582 the need for calendar reform was overshadowed by religious antagonisms. As a Protestant nation, England was determined to have no truck with any time management system proposed by the papacy of the Roman Catholic church.

For one reason or another, therefore, England persevered with the Julian calendar until September of 1752, and once a UNIX user knows what to look for, it's easy enough to identify the Julian dating of the cal command's output for years prior to 1752. "cal 1700," for example, does indeed show that February contained a leap day that is absent from the Gregorian calendar of that year.

The Pitfalls Of Time Measurement

The point of this exercise is that time measurement may not be as straightforward as one would like: inevitably there are local, historical quirks to interfere with the orderly numbering of the passing seconds. The "cal" command illustrates this, but nothing of great importance depends upon its accuracy. It is, after all, just a utility to provide calendar information.

However, in addition to the cal command, UNIX includes a clock to report the time of day, and a very great deal depends on its accuracy. The time of day clock provides timing information for automatic command execution, for file aging, for network synchronization, and for some aspects of system accounting.

UNIX maintains this clock as a counter of fixed size in memory, and each time the system is booted, the counter is initialized from information provided by an independent hardware clock or by the person starting the system. The clock records time as the number of seconds that have elapsed since a fixed point in the past. On all UNIX systems this fixed point, known variously as The Epoch or The Beginning of Time, is January 1,19709 00:00:00 GMT (Greenwich Mean Time).

Because the space allocated for this time of day clock is only four bytes (the size of a "long" integer in the C language), the UNIX clock can't count beyond 2,147,483,647 seconds (the largest signed number that can be represented in four bytes). Translating this into English, the "End of Time" as measured by present UNIX systems is Jan 18, 2038 7:14:07 pm GMT.

Now the idea of a clock with a known expiration date may seem odd at first glance. The UNIX timekeeping apparatus is useless for dates falling outside the 68 years enumerated by the UNIX clock, and application programmers (database manufacturers in particular) have been faced with the need to fabricate alternate methods of representing date/time information within applications.

Of course, things are not as bad as they might be. At least UNIX keeps time in a format that enables the programmer to compare dates and to derive true calendar intervals from these comparisons.

An important feature of the UNIX clock is that it measures time independently of local conventions. The system's count of elapsed seconds is always in relation to Greenwich Mean Time rather than to local time. Because the native time format on all UNIX machines is based on GMT, it is, in principle, relatively easy to synchronize UNIX machines participating in a network.

Ultimately, of course, the time the system knows has to be expressible in a format that is helpful for the system's users, usually the local time of a particular time zone which has its own rules for seasonal variations like daylight savings time.

In addition to its counter of elapsed time, the UNIX kernel also stores information about the local time zone and the appropriate conversion for daylight saving time (DST). The time zone is stored as displacement west of Greenwich (though AT&T UNIX and Berkeley UNIX disagree on whether seconds or minutes should be used to measure this displacement). The flag designating what type of correction will be used for daylight saving time currently recognizes at least 11 different values representing various forms of DST conversion practiced throughout the world.

Whenever the beginning or ending dates of daylight savings time are changed, the presence in the kernel of constants for local time conversions becomes controversial. Hysterical voices can be heard to cry, "Do we have to reconfigure the kernel just to get accurate conversions to local time?"

Reconfiguring the kernel is, of course, not something to be undertaken lightly. However, if the problem of keeping accurate local time is to be cause for any sort of hue and cry, the alarm should at least be of the enlightened sort.

To begin with, the conversion of Greenwich Mean Time to local time is not done in the kernel itself. Indeed, the information about local time stored in the kernel does not include anything to determine if daylight saving time is actually in effect.

The business of translating from GMT to local time is done by a group of time conversion functions in the C standard library (see, for example, the manual entry for "ctime"). These functions use the information provided by the kernel and compensate for other quirks in time conversion. Utilities such as "date" are built from these functions.

From a programmer's perspective this arrangement of things is optimal. The kernel stores a minimum of information, and the actual computation of local time is done outside the kernel in specific programs or functions that have access to both the kernel's information and a host of timekeeping trivia best left out of the operating system.

From the eternally hapless user's perspective, it may not make much difference where translation to local time is done: getting a vendor to provide updated C libraries or utilities that have been recompiled with updated libraries can be at least as difficult as reconfiguring the kernel. Of course, when satisfaction is impossible, it is nevertheless important to be dissatisfied for the right reason. □

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AMIGA

Bon AmiEXPO

By Matthew Leeds

The show circuit is finally winding down. I've attended a half dozen in the last three months, and at last there are no new shows in sight. Sure the West Coast Computer Faire is coming, as is the NCGA show, Video Expo, SIGGRAPH, and assorted other events, but there are no Amiga specific shows in the next couple of months, and I can take a break.

I just returned from the Los Angeles AmiEXPO at the Bonaventure Hotel. The AmiEXPO people have finally gotten most of the kinks out of their show production, and this event was handled very well. I was a little concerned by the high price for admission ($20 for one day, $30 for all three days), but the crowds did not seem to mind.

New Products

After so many shows in such a short period of time, you'd think it would be impossible to find any new product unveilings. This, however, turned out not to be the case.

CSA introduced the first 68030 board for the Amiga. This makes the Amiga the first computer for general use with a 68030 option. The '030 provides on-board memory management, support for the 68882 math co-processor, clock speeds in excess of 20MHz, 256 byte instruction and data caches, and a four gigabyte address range. To supplement this powerhouse, CSA also introduced a 32MB 32 bit dynamic RAM board and an 800MB WORM optical disk drive. We are talking very serious computing here.

At a slightly lower price, Inner Connections, Inc. showed a 20MB Bernoulli drive with SCSI controller. The Bernoulli drive uses a removable cartridge medium, with each cartridge costing around $100. Although the initial price of a system ($1795) is higher than a fixed disk system, the interchangeability of the cartridges adds flexibility. Additionally, Bernoulli drives are virtually immune to head crashes, and have a faster average access time than many fixed disk drives.

Progressive Peripherals and Software, while not an exhibitor on the floor of the show, did have a press suite where they showed several new products. The most exciting to me was a real time frame grabber. This external box works with any Amiga, and captures images in black and white or color in 1/30 of a second. The image is stored in RAM inside the frame grabber, and then passed to the Amiga via the parallel port. Overscan is supported in low res mode. The impressive thing about the frame grabber was the quality of the image it produced.

Also shown by PP&S was the long-awaited *Superbase Professional* programmable relational database. This looks to be one of the hot applications for the Amiga, marred only by the continued use of a dongle for theft protection.

New Horizons Software previewed an upgrade to *ProWrite*. Details were sketchy, but expect great things soon.

R & DL Productions has created a driver that lets you use SummaGraphics graphic tablets with the Amiga. Tablets come in three sizes: 6x9, 12x12, and 12x18. The SummaGraphics tablets have the advantage of not requiring pressure on their surface to activate the cursor. This lets you have a lighter hand while using them. The tablets are bundled with the driver.

Seymor-Radix has created a Thunderscan-like image scanner for the Amiga. This device attaches to your printer next to the print head and will scan any image that can be fed through your printer's paper feed system. The IMG-SCAN will capture up to 256 gray scale resolution.

The long awaited entry of Dr. T's into the Amiga music software community has finally occurred with the release of several programs. The Keyboard Controlled Sequencer V1.6 brings automated 48-track recording to the Amiga. Real time quantizing, punch-in and punch-out, variations generator, synchronization via MIDI clock or MIDI song position pointer, and compatibility with any Amiga MIDI interface are just a few of its features. Also introduced were *The Copyist*, a transcription and scoring package with PostScript and preferences printer capability, Roland MT-32 editor/librarian, and Roland D-50 editor/librarian.

Snip, from Digital Dynamics, is a digital signal processing program that offers 32 bit floating point math applied to analyzing signals from a wide range of instrumentation. Various processes may be applied to captured data, including integrating, differentiating, averaging, rectifying, and smoothing.

NewTek announced a new version of *Digi-Paint*. New features include three-dimensional image mapping of brushes to shapes; brush rotation, sizing, and perspective control; overscan; super bit maps to 1024 x1024; anti-aliased fonts; multiple swap screens limited only by amount of expansion RAM; half-brite support; and a direct interface to *Digi-View*.

Good News For Third-Party Developers

Commodore announced a developers' conference to be held in late April in Washington D.C. This will be a three-day event consisting of seminars on programming, product development, marketing information and new products. The sessions will be led by Commodore personnel and qualified third-party speakers. If you are interested in more details you can write to Commodore for information: CATS-Developer's Conference, 1200 Wilson Drive, West Chester, PA 19380.

An interesting development during the show was the formation of an Amiga Developers Steering Committee. This evolved out of several events and needs. Commodore is working on a new version of the operating system Kickstart/Workbench 1.3. As news of this reached the third-party developers, each developer began to attempt to get information on the direction Commodore was taking on 1.3, and what new features would be added. Since Commodore was not directly making information available, each developer would call their contacts inside Commodore for information (every good developer cultivates inside contacts, just like journalists).

Eventually this led to a major disruption in the development schedule of 1.3, since most of the inside contacts were the same people directly responsible for doing the work on 1.3. While they were on the phone they couldn't be working.

A side effect of this was that as each third-party developer discovered what Commodore was adding to KS/WB 1.3 they had suggestions, comments, complaints, etc. Finally Commodore had to find some way to take control of the situation. An official channel of communication is being created for feedback on the direction of future development on the Amiga. Standing committees will be set up to advise Commodore on such things as changes to the graphics libraries, support for multiple serial devices, extended resolution displays, graphic co-processors, and other areas of interest.

The important thing to note is that this marks a change in Commodore's perception of its third party developers. They are no longer an outside force to either be put up with or ignored, they are now a vital part of the future of the Amiga. ☐

RESOURCES

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Matthew Leeds has been involved in the high tech field since he blew up his bedroom playing with a children's chemistry kit. He has been using Commodore computers since 1982 and has a strong interest in photography, video, graphics and related fields. He currently works for Infinity Software.

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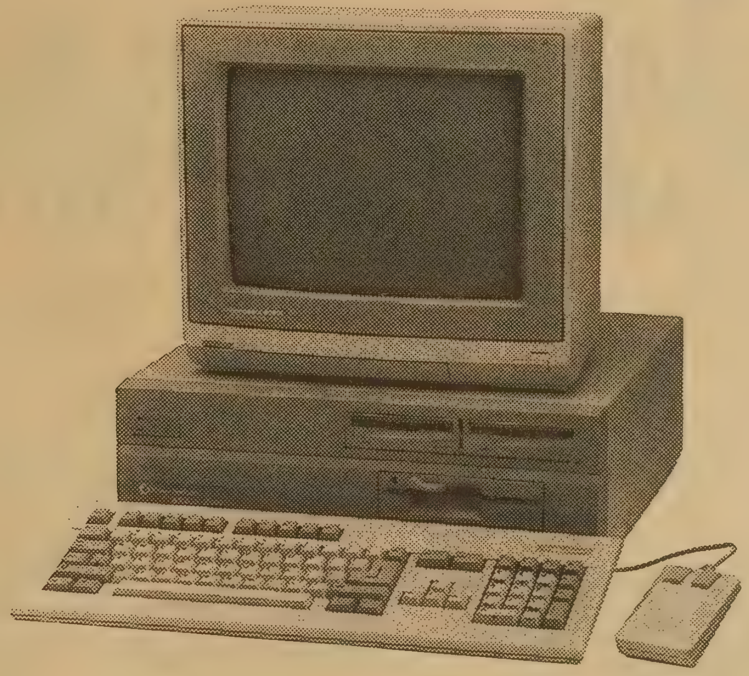

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Great Games For The ST; Atari Laser Printer Ships

By Helmi Kobler

Way back in my December 1986 column, I ranted and raved about a combat flight simulator called *RPV* from FTL Games (619/453-5711). I swore the game was hot, that it was a "must have," and that it would be available "by the time you read this." As my luck would have it, FTL Games never shipped the product — something about RPV's programmer deciding to go college (what's wrong with kids these days?) I'm still waiting for *RPV*, but in the meantime, I've found FTL's two latest games to be excellent.

The first title is *Dungeon Master* ($39.95), a role-playing game that borrows from the popular Dungeons and Dragons fantasy game. D&D has, of course, influenced hundreds of computer games, but *Dungeon Master* complements the usual series of puzzles with exceptional graphics, sound, and a mouse-based user interface that gives you an interactive sense of being in the dungeon with your party of characters.

You start the game by assembling a party of up to four characters, which you can resurrect from a Hall of Champions or create yourself. Characters can be of a variety of races and classes and are described by characteristics such as strength, intelligence, wisdom, etc.

Once you've assembled your party, you set out to explore up to 14 levels in search of the gem and firestaff which will help you reunite the world, which has been split into good and evil halves. During your journey into the depths of the dungeon, you're bound to cross paths with over 20 monsters and other villains.

I think the nicest part about *Dungeon Master* is that it's more interactive than most role-playing games. If you want to pick up an object, for instance, you don't type "pick up sword," but point at the object with your mouse and drag it to the representation of your character's person. To open a locked door, you drag its key from your character and click on the door's lock.

> **The nicest part about Dungeon Master is that it's more interactive than most role-playing games. If you want to pick up an object, for instance, you don't type "pick up sword," but point at the object with your mouse and drag it to your character.**

Almost every aspect of the game is described with graphics or sound. If your character kicks a closed door, you hear the "thud" to accompany the action. If you'd like see the items a character is carrying, the game doesn't present you with a text inventory, but displays a graphic profile of your character, detailed down to type of boots it's wearing.

As well, *Dungeon Master* doesn't use a system of "rounds" or "turns" to control action — everything's in real time. In combat, for instance, blow exchanges do not alternate between your party and the enemy — you may execute any action at any time.

This refreshing approach gives you more of a feeling of "being there," and keeps game play a little more interesting. I'm not a role-playing game lover, but for anyone who enjoys this stuff, *Dungeon Master* should be looked at. If it's not already, it'll soon be the talk of your local BBS, user group or computer dealer.

FTL Games's second title is Oids ($34.95), a shoot-'em-up that borrows from arcade favorites such as *Choplifter*, *Lunar Lander*, *Asteroids*, and others.

Oids' premise is not the most original, but it's fine for a senseless action game. Piloting a small space craft, you have to rescue friendly Oids (enslaved mechanical beings) from the hostile Biocrete's planet surface (*Choplifter*) while avoiding a variety of nasty, high-tech weapons such as guided missiles, jets, and saucers. Your ship is triangular, and you maneuver with the joystick by rotating left or right and applying a thruster (*Asteroids*). The surface terrain of the Biocretian planet is jagged and mountainous, providing only a few flat areas where you can land (*Lunar Lander*) and pick up the Oids, which are housed in buildings or roam the surface of the planet. When you've rescued all surviving Oids (some get easily fried by your cannon or an enemy's fire), you move on to a more difficult rescue scenario.

Oids includes a game construction set that allows you to customize rescue scenarios. For instance, you can re-draw the planet's surface with a joystick, placing Oids barracks and enemy batteries wherever you please. You can also enable or disable any of the enemy's weapons if you'd rather play without them. Other options let you select unlimited fuel, or shields, or set the strength of the planet's gravity.

Oids dresses up an old fashioned shoot-'em-up premise with good graphics and sound. It's not a novel game, but it's exciting to play and you won't have to spend several hours just to scratch its surface.

Atari SLM804 Laser Printer Arrives

After a six month delay, Atari (408/745-2000) has finally shipped its SLM804 laser printer. Due to Atari's limited production resources, you may not be able to find the laser on every dealer's shelf for a month or so, but it's out there in modest quantities.

Not as sleek as some newer laser printers, the SLM804 weighs in at 50 pounds with width, height and depth dimensions of 20.4," 16.2," and 12.2" respectively. It's based on a 300 dot-per-inch write-white engine which produces bold, solid blacks but tends to smear fine lines in small text sizes or hairlines. The printer has

---

Helmi Kobler took his first step into the computer world in 1983 when he walked out of Macy's with an Atari 800 in his arms. Still an Atari user, he's now inseparably attached to his ST. He can be reached through MicroTimes or e-mail <helmi> on The WELL at (415) 332-6106. *Copyright © 1988 by Helmi Kobler.*

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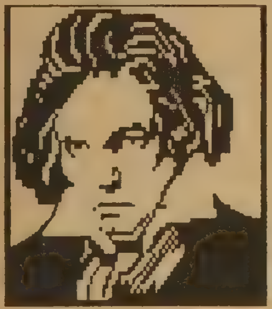

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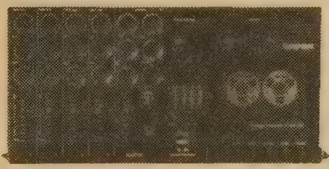

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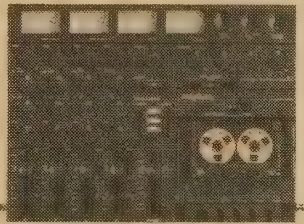

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no onboard microprocessor or RAM, so it uses its host ST's facilities for storing font information or building a bit-map of a page it's printing. You'll need at least two megabytes in your machine to produce pages with multiple fonts or bit-mapped graphics. Since it's best to have as much memory as possible, the SLM804 is being pushed as a peripheral best suited for the Mega2 and Mega4 machines. A 512K machine, however, is adequate for printing pure text in Diablo 630 emulation.

The SLM804 works best with the ST's GDOS standard, which allows the ST to display and print bit-mapped fonts from GEM applications that support GDOS. Popular GDOS applications include *EZ-Draw*, Microsoft *Write*, *Degas Elite*, and upcoming programs such as Timeworks' *Desktop Publisher and Publishing Partner Professional*. The SLM804 can also print from non-GDOS applications, as long as they have SLM804 printer drivers or support the printer's Diablo 630 emulation mode.

It's important to note that the SLM804 doesn't support the PostScript page description language, which has become a standard in many laser printers from Apple, IBM, AST, QMS, Qume and other manufacturers. This is a major flaw in my view, since without official Atari support of PostScript, the superior language is less likely to catch on in future ST applications.

The obvious reason Atari didn't build a PostScript printer is that it would have to pay an initial fee of over $100,000 to Adobe Systems for licensing the language alone, and then pay royalties for each printer sold. Not wishing to pass on much of that cost to the consumer, Atari built a $1995 sans-PostScript printer instead. But PostScript printers are going for around $3000 on the street, and I think Atari could have marketed a machine whose street price would undercut $3000 by a few hundred dollars. And Atari could have sold an inexpensive PostScript printer not only to ST users, which the SLM804 is limited to, but to the entire PC market.

> **Atari's laser printer has no onboard microprocessor or RAM, so it uses its host ST's facilities for storing font information or building a bit-map. You'll need at least two megabytes in your machine to produce pages with multiple fonts or bit-mapped graphics.**

If you're interested in getting 300 dot-per-inch output from your ST or Mega system, however, the SLM804 is your best bet, since it is the de facto standard laser printer in the ST world now. This will be the laser printer most software developers will have in mind when designing new applications.

The SLM804 has a list price of $1995. Since it lacks a microprocessor and RAM , I expect it can be sold for considerably less, especially since $1600 is a typical street price for Hewlett-Packard's LaserJet Series II and clones. It's hard to tell at this point whether Atari will allow its dealers to discount the machine to this level, though.

Internal Hard Drives For The Mega

Supra Corporation (503/967-9075), the popular third party hard disk and modem manufacturer in the ST world, has announced an internal hard disk for Atari's Mega machines — the first peripheral I know of that's designed exclusively for the Megas. It's called the MegaDrive ST and comes in 20 ($649) and 30 ($799) megabyte models. A 40 MB drive is planned. All models are scheduled for release in March.

Both drives have seek times of 65 milliseconds, and the 30 MB version gets additional speed performance by using track buffering techniques.

Supra recommends that you let a technician install the MegaDrive in your machine. It connects to the Mega's internal DMA port, mounting in the front of the machine besides the floppy drive, and shouldn't interfere with future internal products that will connect to the Mega's 68000 bus. It borrows power from the Mega's power supply. You'll have to drill a small hole in the Mega's front panel to place an LED that indicates that the MegaDrive is busy.

Be warned, however, that while Supra warrants its drive for 90 days, installing it will unfortunately void your Mega's warranty. ☐

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APPLE II

APPLE, TOO

Is The Apple II Doomed?

By Mike Markowitz

Sooner or later, every technology reaches the end of its marketability, no matter how useful and effective it may remain. This happened to the longbow, the slide rule, and even the Volkswagen Beetle. Painful as it may be to contemplate, it is also about to happen to the 6502 microprocessor, which is the 8-bit, 1 megahertz engine of the classic Apple II.

An installed base of four million has a certain inertia, especially when a large portion of that installed base resides in schools. People who use Apple IIs tend to regard them with the sort of affection usually reserved for good-natured pets, or reliable cars. Increasingly, that affection is tinged with defensiveness, as our friends show off their Mac IIs, Toshiba laptops and '386 Turbo-Tyrannosaurs.

Grownups understand that a time comes when even the best-loved pet has to be put to sleep. That time may be at hand for the ten-year old technology of the Apple II. After all, in dog years, that's over 70. In computer years, it's more like a millennium.

It doesn't help that Apple IIs are also overpriced. People who should be buying Apples are buying no-name PC-XT clones and condemning their families to the MS-DOS Hell of incompatibility and obsolescence. Why? Because you can get a turbo-clone with a hard disk ("Look Martha, it's just like the one Mommy uses at work.") for about half the price of a new IIe without one.

The classic Apple II is slow. Its native language is AppleSoft, a feeble antique dialect of BASIC (some programmers call it AppleSloth). It can't directly address more than 128K of memory. It has limited graphic resolution, and can't handle more than 16 colors. It practically needs another computer to manage I/O for a hard disk, which makes for very expensive mass storage.

These limitations have been overcome for many years by the creativity, daring and persistence of a remarkable community of programmers, developers, engineers and hackers. But we have now arrived at the point of diminishing returns. If you don't believe it, look at the current crop of Apple II software and peripherals, and compare them to what is produced for the major leagues of MS-DOS and Macintosh. Right now, most new games published for the 8-bit Apple II are conversions of titles for the Commodore 64, with inferior sound and graphics. Serious gamers buy an Atari ST or an Amiga.

When IBM realized that the PC-XT/AT standard had reached a technological Dead End, it pulled the plug on a profitable and popular product line. Some of the PS/2 replacement machines may be kludgy, but the commitment to new technology is clear (better graphics, 3.5" disks, the Micro Channel bus, multi-tasking, etc.).

> **People who should be buying Apples are buying no-name PC-XT clones and condemning their families to the MS-DOS hell of incompatibility and obsolescence. Why? Because you can get a turbo-clone with a hard disk for about half the price of a new IIe without one.**

If the Apple II idea has any future, then surely it lies with the IIGS architecture, which provides ample room for growth. The more you learn about the IIGS, the more you realize it isn't an evolutionary dead end (like the poor Apple III), but rather the gateway to new possibilities. To realize those possibilities, however, Apple will have to take some risks and make some smart moves.

As Kenny Rogers reminds us, *every gambler knows that the secret to survival is knowing what to throw away and knowing what to keep.* I think the first move would be to terminate production and marketing of the IIe and IIc. That would send a clear message that "Apple II forever" means Sixteen Bits. As long as you can walk into your Apple dealer's store and walk out with a new 8-bit system, the developers will go on publishing klutzy, crippled software for it, and the IIGS market will be stifled.

I realize that many users will regard this as a proposal to do away with Classic Coke. Apple may view it as a proposal to kill The Cow That Gives Cash. This author recognizes his obligation to air responsible opposing viewpoints. Write and tell me if you think I'm crazy.

A viable product line needs a clearly defined low end, mid-range and high end. To put it simply, the present IIGS needs a little brother, and a Big Sister.

If a true laptop portable isn't feasible yet, the little brother could be similar to the present IIc, maybe a little wider to accommodate the numeric keypad. Without the need for slots, or an internal power supply, it could be mass-produced cheaply enough to be a true VolksKomputer. The built-in 3.5" drive would be the most expensive component. The 140K, 5.25" floppy disk is a terrible medium for software, especially for schools. It's fragile, bulky and gives little room for graphics. The sooner we bid it goodbye, the better.

Apple's top management has repeatedly emphasized that the company isn't interested in competing for the low end of the market. On the other hand, they once said that "Kids Can't Wait." The most effective way to use computers in schools is to put one on every desk and in every home. That isn't going to happen with $2000 yuppie-toy systems. The ideal school computer is a one-piece armored box that can be delivered in quantity for under $500.

We've described what an entry-level system might look like, but what about the top of the line? For the sake of argument, call it the GS Plus.

Every IIGS user will agree that the key to the future survival of this system is more speed. At the present 2.8 MHz clock rate, programs are slow to load, files are slow to copy or save, searches and recalculations are slow to execute. There are a lot of ways to make a computer work faster—boosting the clock rate, adding a math co-processor, and various data-caching schemes. The next GS had better be at least twice as fast, with an upgrade path for present GS owners.

Right behind acceleration on the wish list comes mass storage. Until erasable laser optical media become affordable (some time in the late 1990s?) that means an internal hard disk. Adventure games for the GS are already starting to take up two 800K disks. *WordPerfect 2.0*, with its Dictionary/Thesaurus, takes three disks. Most GS owners could only afford one 3.5" drive. If the top case of the IIGS were redesigned, there would be room for an internal hard disk. Let it be a small personal hard disk, so no one could even imagine that the system is a possible substitute for a Macintosh business machine. The case needs to be redesigned anyhow, because it is too hard to open without breaking a fingernail. Don't Apple engineers *have* fingernails?

Then there is the matter of the missing pixels.

All around the edge of the IIGS screen is a half-inch border of dead space. I guess it's there to make the screen aspect ratio come out right for compatibility with 8-bit graphics. You can have it any color you like, but you can't do anything with it. It is too much to hope for a future video mode that will use *all* the display capability of the monitor? The GS super-high resolution video modes are 320 × 200 and 640 × 200. Two hundred horizontal lines isn't enough for excellent graphics. The Macintosh has 342 (480 on the Mac II with Apple's monitor and video card).

I'm not going to ask for a built-in SCSI port. I'm not going to ask for a built-in MIDI interface. I'm not even going to ask for a megabyte of fast RAM on the motherboard. I'm certainly not going to ask for a 68020 co-processor board with Macintosh ROMs. Not yet anyway. Apple's two families may be destined to converge somewhere down the road, but until then, they need to pursue separate kinds of excellence. The history of the Apple II should not end ignominiously, as a cash cow being milked to fund Macintosh R & D, or as a toy Mac with trainer wheels, confined to an educational ghetto. Macs are "Wheels for The Mind," but Apple IIs should be wings. ☐

Mike Markowitz is a computer engineer for a large Southern California aerospace firm. He has been writing about Apple II hardware and software since 1984. Copyright © 1988 by Mike Markowitz.

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CP/M

On And ON!

By Robert D. Athey Jr.

A few months ago, we discussed the ON! computer. We particularly liked the 2MB RAMdisk device with the special design emphasis on protection of the power supply, which, you may remember, is never disconnected or turned off, so the ON! is always ready to run whatever program you need. The secret lay in the CPU design with brownout, current spike, and blackout protection. The ON! is built by the ONEAC Corporation, a small company whose main business is surge protection for mainframe computers and for special electronic instruments in labs; it's available for around $2500.

Just after the column about the ON!, I got a call from the company's Illinois facility describing an upgrade. There was a large package arriving with new software, a new bootup ROM, new key caps, and an operating manual (the latter to replace the two typewritten drafts I'd gotten originally). When it arrived, I called two techie friends who had been interested in the ON! to give aid in ROM insertion and keycap replacement. When we read the installation directions, they were so clearly written and so easy to follow, I found I really didn't need these guys, after all. I installed the key caps with the aid of a little screwdriver while Woody McPheeters and Dwight Chew put in the ROM, and they finished before I did.

Installing the keycaps simply required unplugging the keyboard, turning it over on a pillow, and taking out six screws. The top of the keyboard is turned over and the caps needing replacement removed with a little edge pressure from a small screwdriver. A keyboard diagram with a yellow Magic Marker covering the twenty caps to be replaced shows the correct location of the new labeled caps. They popped on in a simple press fit.

The ROM installation was simple, in part, because the design of the CPU makes it so accessible. Naturally, you have to disconnect the power, and make sure the internal battery has its shipping plug in it. Four screws are removed, and the outer cover lifts up off the base. You only have to raise it five inches or so. The whole CPU is tilted over to rest on its side, and the ROM is staring at you from the upper right hand corner. The ROM to be replaced is labeled, and you pull it and just plug in the new ROM labelled ON! 3.6. The instruction set then walks you through the reverse process of opening and powering. It even gives you the boot up instructions, and tells you the sorts of screen information you should see (with a hint to call their customer service line if you have a problem).

The software upgrade brings in a substantial RAM resident background utility. It includes the things you might expect of the background utility — the phone dialer, the calculator, the note pad, etc. But there's more. One set of function key settings is for *NewWord*, which is bundled into the ON! All the block marking, copying, saving and moving commands are on single keys. There is another set of function commands that handle printing commands, including a "Make the following number of copies of the document" command.

One feature of the software provided is the extensive set of utility programs, extended with their recent upgrade. One such program is the file manager, called up from the main system menu by typing in an "M." The file manager will rename, delete, view, print, copy, tag/untag or move files to or from disks or among the user areas within the RAM disk. It is a utility very like *NEWSWEEP*.

The software also includes a modem control program called *IMP.COM*. This public domain program was Irv Hoff's modem program that followed *MDM7*, which I described in a column a few months ago. The name IMP is really his acronym for Improved Modem Program. Most of the features and commands are identical to those in *MDM7*.

There is also a major new feature: a file transfer protocol that will shoot out 1000 bits of information in a burst, whereas the older program's protocols allowed a maximum of only 128 bits per transfer.

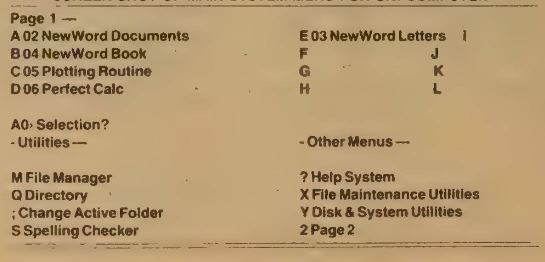
While we're discussing modem considerations, there is another feature of the ON! I've never seen any where else: a signal conditioner circuit built into the CPU for the telephone line. You use a telephone connection cord to run into the computer, where there is the "signal smoothing" circuitry, and an outlet where you use another telephone cord to connect to the modem. The modem is operated from the serial cable port of the computer, as is standard with any computer without an internal modem card.

The main system menu software for the ON! is unique. For instance, we can simply type in an "A" and get into the *NewWord* software in document mode. An input "E" instead of the "A" will get you into *NewWord* in correspondence mode (no page numbering already installed in the document mode options, for instance). There's a way to get into the non-document directly from the system menu, as well. Indeed, one could even rig the main system menu to call up *NewWord* for some other "file folder." I've rigged other "folders" for my *PlotPro* scientific plotting routine (from BV Engineering) and *Perfect Calc*, my spreadsheet program. We show the main system menu in the enclosed figure.

But you don't need to use the system menus. If you are comfortable with CP/M's standard "A›" prompt, you can choose to bypass the main system software menu at the opening menu by typing in a "Z" instead of the "›." The "Z" choice is a reminder that you are really operating under the "ZCPR" system modification of standard CP/M. ZCPR is one of the software enhancements of CP/M that make it easier to handle hard disks or RAM disks with multiple user areas. This ZCPR program is available from Echelon Software, which has recently moved from Fremont to South Lake Tahoe.

So, in a household with four computers in it, I find good reasons to use the ON! daily. I keep my business accounts on it, because *Perfect Calc* runs faster and with fewer glitches than it did on the Kaypro II. For a presentation late last year, I even used *Perfect Calc* to do the arduous job of making contour plots. Since the machine is always ready, with no need to find disks with software or templates on them, I can just sit down and bat out a letter in a minute, even including pre-prepared fee schedules and consulting resume with the ".fi" command for *NewWord*. One of these days, I'll install *WordStar 4* for CP/M on it. The ON! moves with me when I move to my new office next month, and the MS-DOS desktop stays at home. I am a real fan of the ON! ☐

SCREEN SHOT OF MAIN SYSTEM MENU FOR ON! COMPUTER



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Page 1 —
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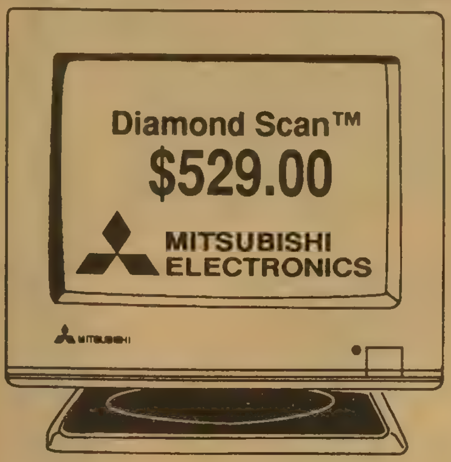
Bob Athey has over 20 years of experience working on computers and runs his own company on chemical consulting and contact research. He can be reached through MicroTimes or at (415) 526-3541. Copyright © 1988 by Robert D. Athey Jr. All rights reserved.



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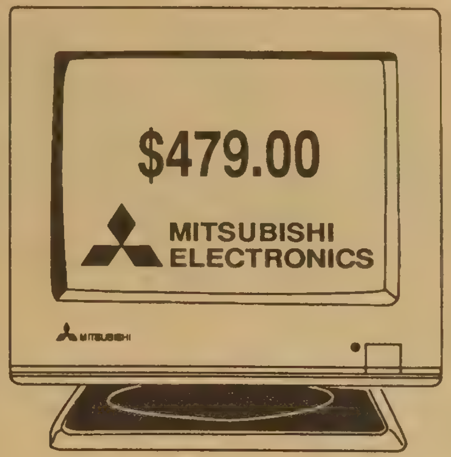

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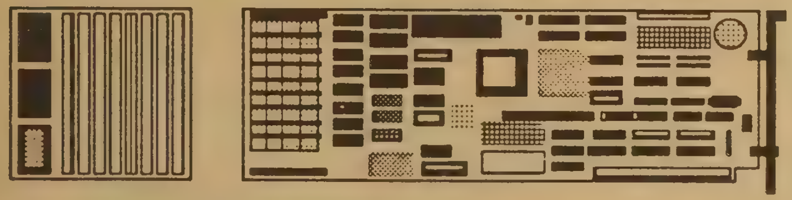

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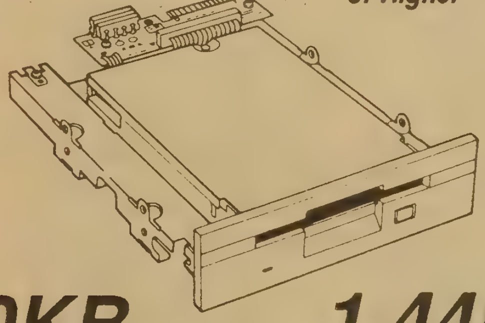

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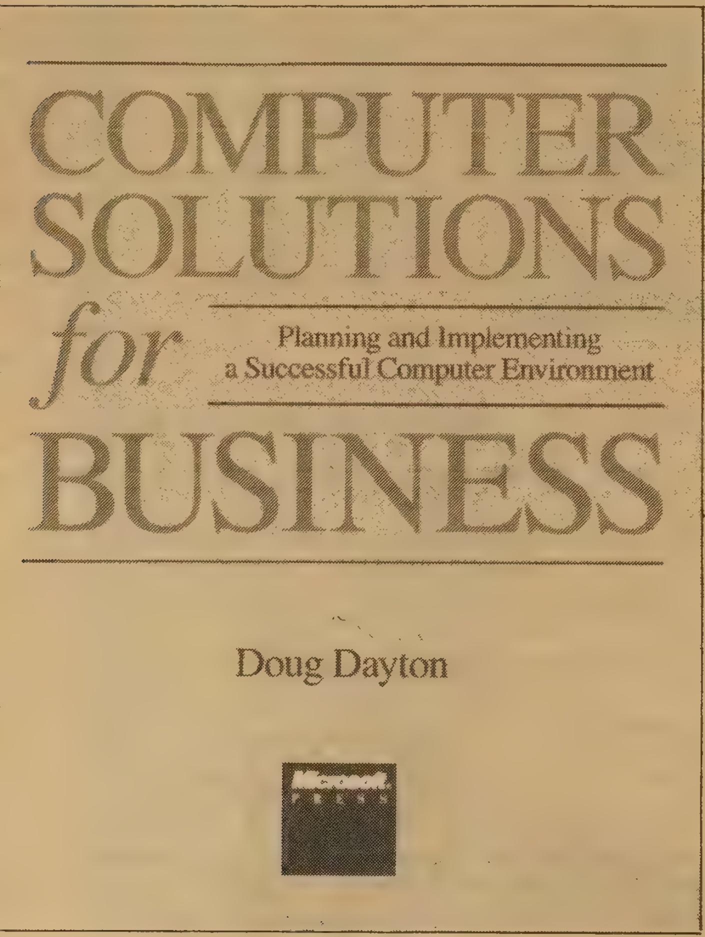
COMPUTER SOLUTIONS for BUSINESS
Planning and Implementing a Successful Computer Environment
Doug Dayton
Microsoft Press

Computer Solutions For Business From Doug Dayton

Computer Solutions For Business: Planning And Implementing A Successful Computer Environment by Doug Dayton is available from Microsoft Press. *Computer Solutions* is a guide to office automation. Written especially for the small business owner, operations specialist, office manager, purchasing agent and consultant, it is designed to help non-technical people in computer-related decisions in any small to mid-sized business. The book offers a straightforward process that readers can follow to determine their own automation needs. ($17.95) Microsoft Press, 16011 NE 36th, Box 97017 Redmond, WA 98073-9717. (206) 882-8080.

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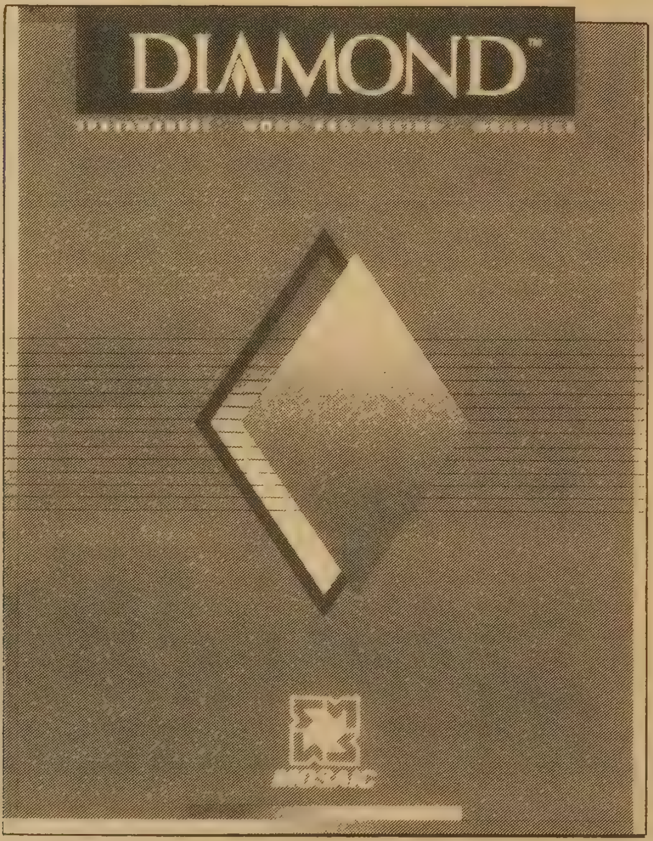

Diamond Combines Spreadsheet With Word Processing And Graphics

Diamond from Mosaic Software combines spreadsheet, word processing and graphics into an integrated application. The spreadsheet contains 8192 rows by 256 columns and is compatible with Release 2.0 of *1-2-3*. *Diamond* allows the user to take information from the spreadsheet and use it in the word processor and graphics program. The word processor includes an 80,000-word spell checker and the thesaurus and uses on-screen menus similar to those of the spreadsheet. The graphics program offers easy-to-use fill-in-the-blank input forms and an extensive assortment of graph types. ($195.) Mosaic Marketing Inc., 1972 Massachusetts Ave., Cambridge, MA 02140.

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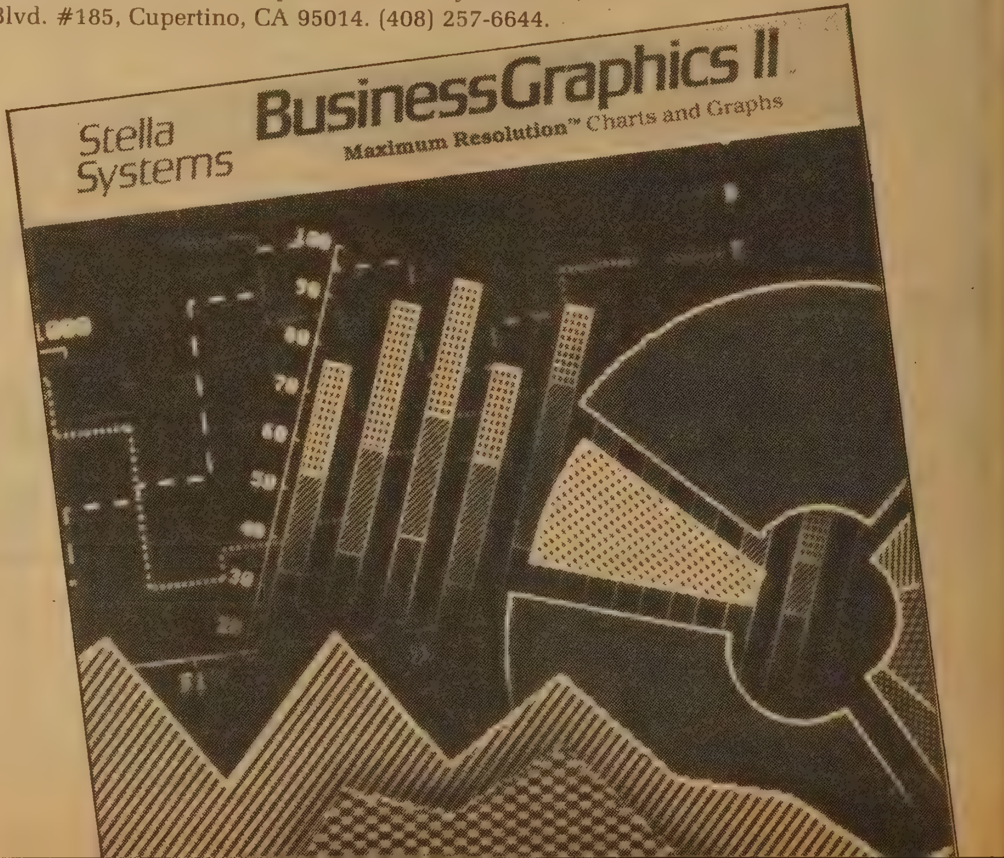
BusinessGraphics II from Stella Systems contains a built in spreadsheet that allows users to enter data and data labels, press a key and create a chart. Stella Systems guarantees that you can create your first graph in five minutes or your get money back. *BusinessGraphics II* also adds enhanced graphics to spreadsheets such as *Lotus 1-2-3*, *Multiplan* or *SuperCalc III*. You can also build graphs from databases and word processors by importing DIF, SYLK, ASCII, WKS or WK1 files. *BusinessGraphics II* also allows you to add text and labels anywhere on your graph and works at maximum resolution with all leading dot matrix and color dot matrix printers, plotters and laser printers. Stella Systems Inc., 10430 S. DeAnza Blvd. #185, Cupertino, CA 95014. (408) 257-6644.



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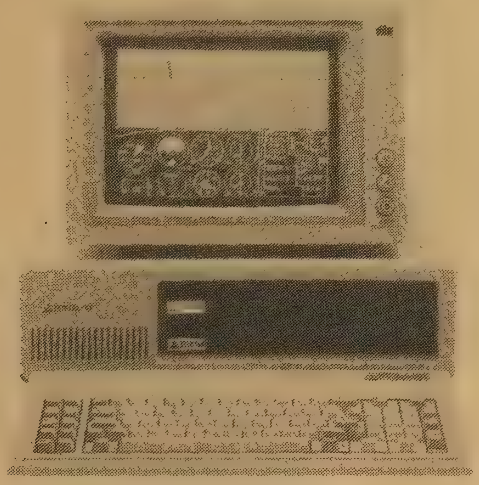

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Changes Coming Real Soon Now

By Mary Eisenhart

Next month will see our long-awaited all-new user group and BBS listings; if you haven't sent in your update by now, it won't be appearing. But take heart — fill out the form conveniently included in this issue; send it in, and we'll get it in the May issue if it arrives by March 1.

The biggest problem we're encountering in dealing with the new listings is that there's a sizable minority of people who are still sending listings which rival the *Encyclopaedia Brittanica* in length, in spite of our entreaties to keep them to 15 words. As a result, the long listings will be cut to 15 words by us instead of their authors, a situation with very little appeal to anyone. (Least of all the estimable **Rob Beauchamp, Editorial Assistant,** who's in the process of performing this thankless task even as we speak.)

Reluctant as we were to adopt a length limit, and much as we understand a sysop's zeal for singing his board's praises as eloquently as possible, it simply isn't manageable (in terms of space consumption or keyboarding labor) to print long listings. True, some boards have features rivaling those of a Mercedes, but we simply can't list them all. So please, in the interest of preserving continued free listings, abide by the 15-word limit. Think of your listing as a pointer to your board or club, rather than a promotional catalog, and try to write the listing for maximum impact and usefulness. Thanks.

One thing we might suggest, for groups with an enormous number of Special Interest Groups with different meeting times and dates, is that each SIG should send in a separate listing with SIG-specific descriptive information. Since some of the larger user groups have upwards of ten or twenty SIGs, even my hatchet-wielding persona realizes that you can't put all that information in 15 words.

On a slightly happier note, I'm glad to report that, whereas it was temporarily necessary (during the space crunch caused by old listings) to stop running out-of-area BBS listings, we will restore SoCal listings to NoCal, and vice versa, starting next issue. So all those outlying boards will once again be easy to find.

Speaking of outlying boards, Singapore seems to be a hotbed of them. Last month brought us a listing from **N.M Rahman's Cassia Express BBS** (065-344-9163); this month brings us the **Remote Bulletin Board (Singapore),** operated by **Umar A. Rahman.** The board has two nodes — 065-445-1646 and 065-242-7669 — and operates 24 hours a day. It offers 218 megabytes of IBM ul/dl and supports 1200, 2400, and 9600 baud modems.

From **Ari Davidow,** contributor to these pages and co-host (with **Maurice Weitman**) of the **Jewish Conference on the WELL** (415/332-6106), comes word about **KesherNet,** a Fido-based network linking Israel and the US. He characterizes the contents as "Torah, Hebrew, general schmoozing and an Israeli classified section." (Ari's also been posting some Israeli political debate from the net on The WELL, which has been leading to some interesting long-distance conversations.) Sysops who'd like to carry the KesherNet echoes on their systems are invited to contact **Dick Fiedler** (115/940), (312) 940-1696. And California-based interested parties are invited to check out **Henani** (143/444), (415) 855-9548, or **The Philosopher's WOC OPUS** (103/507), (714) 535-1258.

Kenneth Roach of Manteca sends an updated listing for his **Bertha Board,** which operates 24 hours a day at (209) 239-9853, 300/1200/2400, 8-N-1. It offers uploads and downloads and has some emphasis on programming and MS-DOS. Ken mentions in passing that modem traffic is a little light in Manteca, so give his board a call and tell him *MicroTimes* sent you!

Jim Rankin of San Francisco informs us of two boards currently running on a single line (415/731-2422) but due for independent existence soon: **The Nightingale BBS,** a pilot project for a BBS for nursing students and faculty at UCSF in San Francisco, offering messages, news, mail, open forum and downloads, and **The Pilgrim BBS,** which emphasizes spirituality, Catholic nursing, and the spiritual development of homosexuals from a Catholic perspective.

Wallace Lin of Sunnyvale sends word of the **Stock Market BBS** (408) 733-9341, 300/1200, 8-N-1, which runs 24 hours a day as a multi-user, multi-line system. It offers price forecasts for 6,000 NYSE, AMEX and OTC (NMS) stocks. Wallace adds that the board has been rated by stock traders and investors as the best BBS of its kind, so check it out, whether your portfolio is real or imaginary.

James Arnold of **Kortek,** a telecommunication software firm in Sunnyvale, invites you to call the company's bulletin board, which is free, at (415) 327-4589, 24 hours a day. The board focuses chiefly on public domain software for IBM and MS-DOS computers, and welcomes user suggestions for improvement and expansion.

If you're someone who works in emergency services, you might want to check out the **911 Emergency Services BBS** at (707) 664-1639, 24 hours a day, 1200/2400/9600 (Fastcomm) baud. Sysop **John Wilson** invites fire-people, police officers, other emergency service employees and interested members of the general public to call and contribute to the discussion.

Meanwhile, while we're waiting for all those spiffy new listings, we've got some **User Groups On The Move.** Faithful correspondent **Curtis Jones** of **APLBUG** informs us that I.P. Sharp, in whose offices the club's monthly meetings are held, is moving to 425 Sherman Street, Suite 200, Palo Alto. Consequently, the meetings, which continue to be held on third Mondays, are moving to the same address. Call Curtis for more info.

The **Atari Computer Association of Orange County** also has a new meeting address: Room W101, near the gymnasium of Rancho Santiago college at the intersection of Bristol and 17th in Santa Ana. Call the group's hotline at (714) 838-3099 for more info.

Regrettably, **Ross E. Voyles** writes to tell us that the **Stanford Morrow Users Group** is disbanding after its January meeting; Morrow users in need of support for their CP/M machines would probably do well to check out other CP/M groups in our listings. So long, SMUG, and thanks.

Gloria Hutchinson of Vallejo passes along the news that the **North Bay Users Group** is no longer meeting at the Cave School on Tuesday nights, but has changed to second Thursdays at 201 Maine Street in Vallejo. If you'd like more information, call (707) 644-9327 or write to P.O. Box 7156, Vallejo, CA 94590.

Finally, **Andy Breglia** of **FUNHUG** (Fremont, Union City, Newark, Hayward User Group) Commodore updates us with the news that the group has returned to its Commodore-only origins, and the IBM branch of the family has formed its own group. The club now meets at the Newark Public Library, 6300 Civic Terrace Avenue, Newark, on the third Thursday of the month.

That's all for now; see you next month with our New, Improved, Spiffy Updated Listings. And keep that info coming to us via Snail Mail at 5951 Canning Street, Oakland, CA 94609, or send email to microx on The WELL (415) 332-6106. ☐

BULLETIN BOARDS

065

Remote Bulletin Board. (065) 242-7669 (Singapore). 24 hours, N-8-1, 300/1200/2400, UL/DL 67 meg. Sysop: Umar A. Rahman.

206

The Board Of Review. (206) 361-8018. 300/1200 baud, 8-N-1, 24-hours, Commodore. Sysop: Ron Strauss..

28 Barbary Lane. (206) 323-2828. 300/1200 baud, 8 bits, 1 Stop Bit, Full Duplex, No Parity, 24-hours. Sysop: Mrs. Madrigal.

209

Region 7 TEC Center BBS. (209) 571-5085. Specializing in music and schools. 24 hrs, 300 baud. Sysop: Dan Guerra.

Inn· Finity BBS. (209) 521-6240. Inn Finity is an Atari based BBS. Operates on a 130XE with 320K. Signalman 300/1200/2400 baud, 24 hours a day. ATASCII—ASCII. Sysops Buzz and Jann Kelley.

Bullseye BBS. Stockton, CA. (209) 474-FIDO. IBM and compatibles. 300/1200/2400 baud. Open 24 hours, 8-N-1, FidoNet 161/31 Valley PCUG. Sysop: Bob Loeber. Validation required. Lots of MS-DOS shareware.

The Spotlight BBS. (209) 368-5591. 300 baud, 24 hours, 8-N-1, dual drive Commodore 64 operated. Sysop: The Spot.

Bertha Board. (209) 239-9853. 8-N-1, 300/1200/2400 baud. 24 hours. MS-DOS oriented, with emphasis on programming source code. Free. Sysop: Ken Roach.

Motherload-64 BBS. (209) 754-5530. 8-bit, 1 stop, Punter and X-Modem, D-load, 9:30pm to 6:30am only! 300 baud. Motherload-64 is run by a programmer who is also a Plus/4 owner. Sysop: Larry Anderson.

305

Miami PC Users Group BBS. (305) 621-7534. 2400 baud, 24 hours. PC-Pursuitable. Sysops: Ken Burch and Bob Ash.

Miami's Big Apple. (305) 948-8000. 300/1200 baud, 24 hours. Online Apple users group with heavy Apple support. PC Pursuitable. In seventh year of operation. Sysop: Bob Sherman.

312

Feminist BBS. (312) 225-9138. 8-N-1, 24 hours, 300/1200 baud. Feminism, women's issues, general talk. Sysop: Susan B. Anthony.

408

Atari Base BBS (408) 745-5308 or (408) 745-2642. 300/1200 baud, any time, any day. The official BBS of Atari Corp, for all Atari computers.

Byte Bandits ColossusNet. (408) 374-3974, 300/1200, 24 hours. Network USA. Sysop Sam C. Brown.

Bizcomp BBS. Sunnyvale, CA (408) 720-9212, 300/1200, 24 hours. Message base specializing in modem technical help, with a special message conference for sysops. No file transfers available. No registration fee, but requires home & business phone numbers on first call.

Non-Smokers BBS. (408) 298-4277, 298-GASP, 8-N-1, RBBS PC, 24 hours per day, 300/1200 baud. Sysop: Ed O'Dwyer. Features non-smoking areas in restaurants and hotels, health info, diner's conference, messages, public domain software.

Home Board (408) 277-0106 no fee. A non-profit BBS focused on housing issues in Santa Clara County. 1200 baud, 24 hours M-F (8 am Monday through 5 pm Friday). Sysop: Beth Wyman (408) 299-2566.

Board III (408) 985-7573. 300/1200 baud, 24 hrs., 8 bits, no parity. Board III is an ongoing experiment in telecommunications. Atari-based, but all computers welcome. Sysop: "The Chairman."

ADV in Lrn (408) 247-4769.

The CATS BBS (408) 356-8902. Computer Assisted Typography Service Typesetting BBS. Online tutorial of PC typesetting, public message bases, 300 baud only.

Sailors Refuge (408) 262-3963. 300/1200/2400 baud, 8/N/1, 24 hours. Sigs for most computers, games and more. Unique software. Easy, user friendly. Fast validation. U/L-D/L for all Sigs. Sysop your own special SIG. Over two years of non-stop operation. E-mail system. Library text files. Sysop: Ron Pierce.

Bulletin Board Hewlett-Packard BBS. Features HP-current events and user information. 24 hrs., 300-1200 baud, 7 bits, odd parity, 1 stop. NO FEE. (408) 747-1243.

The Man O'War, (408) 243-2370. 24 Hours, 300/1200 baud. Over 52 message bases, organized activities. A member of the Silicon Valley Sysop's Exchange.

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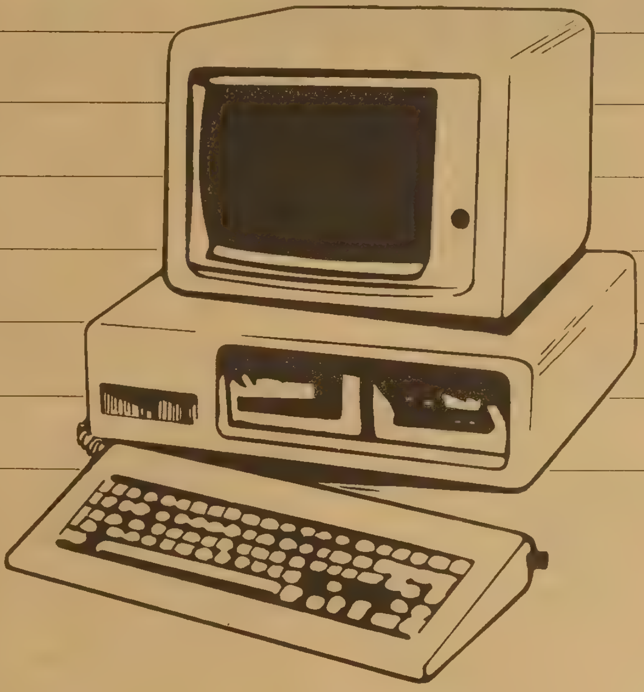
NORDIC COMPUTERS



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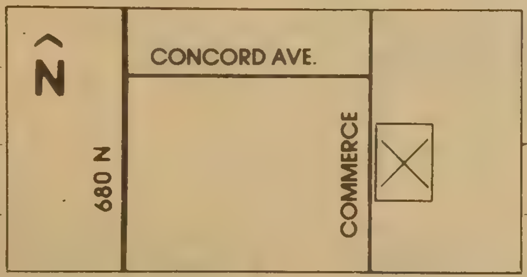

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Hotel California. (408) 942-1081. 24 hrs., 300 baud, Commodore oriented.

The Flying Fido. Fido network 143, node 23, is now up and running 24 hours per day, except during FidoMail. 300/1200 baud, (408) 946-3183. Special interest in aviation; ul/dl of pd software. Free.

Association of Apple 32 Users BBS. (408) 263-0299. 24 hrs., 300/1200. Sysop: John Griffith.

Sofia System. (408) 244-5055. 300 baud, 24 hours, BBS protocol. Conversations and e-mail. Ten lines of multi-user interaction. Netowrked nationally. Sysop: S.W. Heissain.

Matchmaker San Jose. (408) 249-4566, 300/1200 baud, 24 hours, 7 days, 4 lines in hunting. 300 plus calls a day. Matchmaker San Jose is the ultimate pen pal system. Make a date, meet a friend, have the time of your life. Nationally networked. Type "mm" at login. Sysop: The Matchmaker.

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The Snake Pit BBS. (408) 266-5895, 300/1200, full duplex, 8 bits, no parity, 1 stop, 24 hours. Commodore ul/dl.

WYRLD WYRM BBS. Role-playing games, computer games, and science fiction. Open access, everyone is welcome. FidoNet node 143/12. 9 am- 6 pm weekdays, 10:30 pm-6 am every night. 300/1200 baud. Robert Plamandon, sysop. (408) 263-8134.

Tele-Play. (408) 723-9003. 24 hrs, 300 baud, program matches parameters. Sysop: "Titan."

Consumers BBS and Insurance Center, Sunnyvale. (408) 732-4126, 300/1200 baud, 8-N-1, 24 hours. Rate your own home and auto insurance with one of the nations's top 5 insurance companies. Apply for a car loan with Lloyd's Bank. Get the Dealer's cost on new cars. See if your auto has been recalled. Buy or sell a car. Free, no passwords, no time limits. Sysop: Al Moskal.

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Computer Tyme-NUG-SV. (408) 732-2353. 300/1200/2400 baud, 8-N-1, 24 hours. Sysop: Gary Araki.

Gino's. (408) 371-2703. 300/1200, Commodore UL and DL. Sysop: Porkchop.

The PET Sematary. (408) 263-3486. Commodore specific, X-Modem, Punter files, XSee. 300/1200 baud, 8-N-1, weekdays 5 pm-10 pm, weekends 10 am-10 pm. Sysop: Grave Robber.

Enable BBS. (408) 998-8927. 300/1200, 24 hours. We're here to provide support for your computer. IBM based, but all users welcome. Also featuring "Dear Enable," the alternative to suicide. Sysops: Rob Ehlers, Tim Duncan.

INTEREX User BBS. (408) 746-0834. 8-N-1, 24 hours, 300/450/1200 baud. Designed to accommodate INTEREX affiliated users, along with all other users of HP computers. There are sections for HP 3000, HP 1000, HP 9000 and HP Series 100 computers, including the Vectra. One important topic is intended for users to pass along their comments/suggestions/requests of HP lab folks, to INTEREX, for delivery to HP, helping affect the course of new products and enhancements from HP. Sysop: Jack McAlister.

Comp-U-Ease BBS. (408) 286-8332. 300/1200/2400 baud, 24 hours, 8-N-1. IBM and Atari ST oriented. No fee, dBASE SIG, lots of downloads. PC Board utilities. Sysops: Stuart Smith and Eric Smith.

The Dynamic BBS. (408) 972-9750, San Jose, 22 hours, 7 days, maintenance 5-7 pm daily. Registration required. Features: contests and prizes, 100 meg of d/loadable files and more. Coming attractions; multi-lines, on-line programs and games, multi conference areas. 1200/2400 baud, with limited access to 300 baud users. Sysops: Terry & Sharon, The Dynamic Duo.

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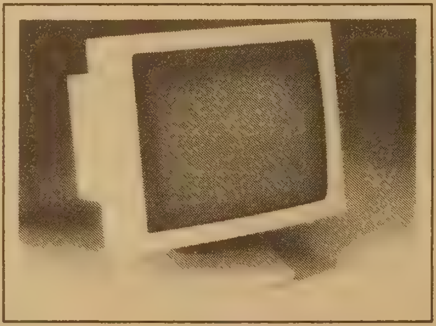

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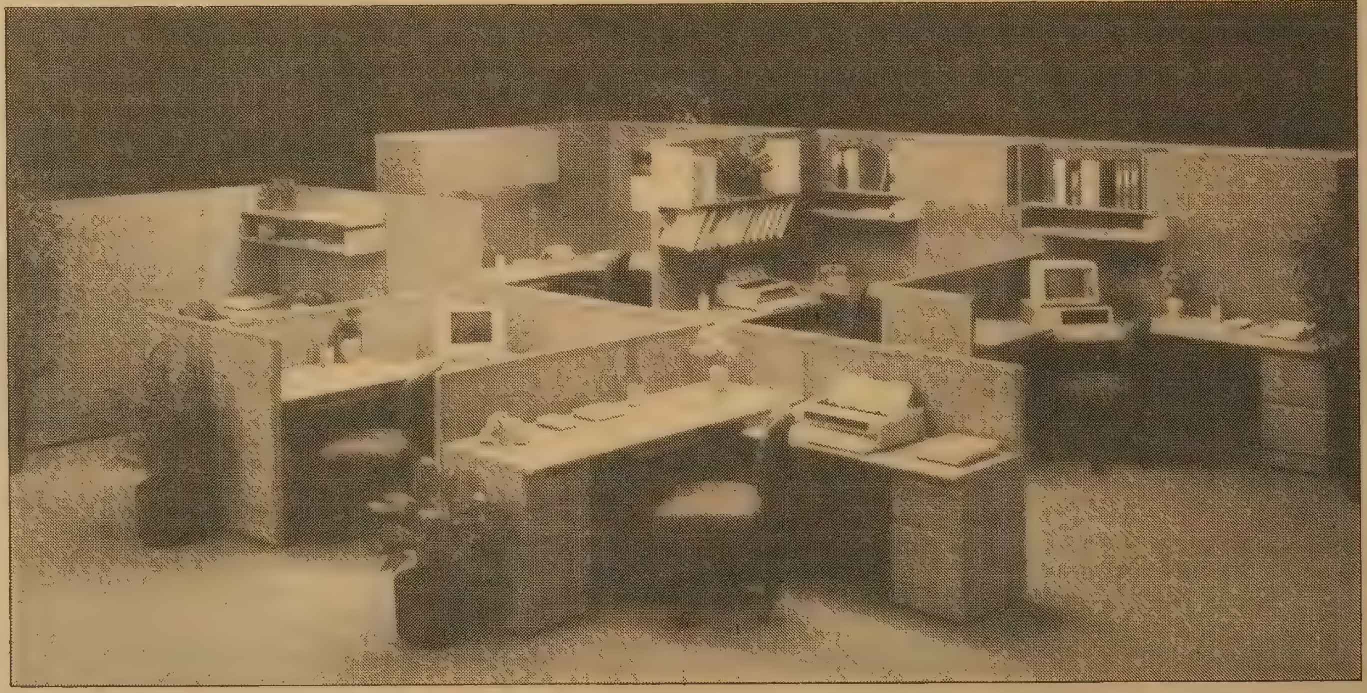

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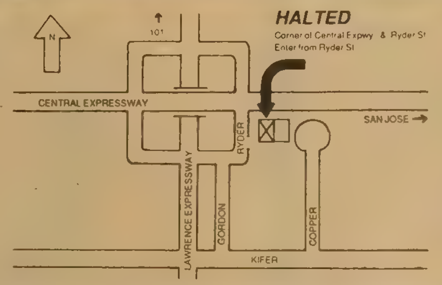

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PCUGR Superboard. (707) 546-4938. 300/1200/2400 baud, 8-N-1, 23 hours. Fido-net BBS. BBS for PC Users Group Of The Redwoods. Sysop: Mike Farell.

Short Wave Listener's Guide BBS. (707) 526-0924. 300/1200 baud, 8-N-1, 24 hours. Four boards: Pub Discussion, SWL Signal Reports, Hints & Tips, Hardware Corner, Text files: Eng Lang Bcast Skeds. Sysop: Dave Willey.

813

Blithe Manor. (813) 839-0734. 1200 baud, 8-N-1, 24 hours. Multi line. Adult dating. Sysop: Bill Rucker.

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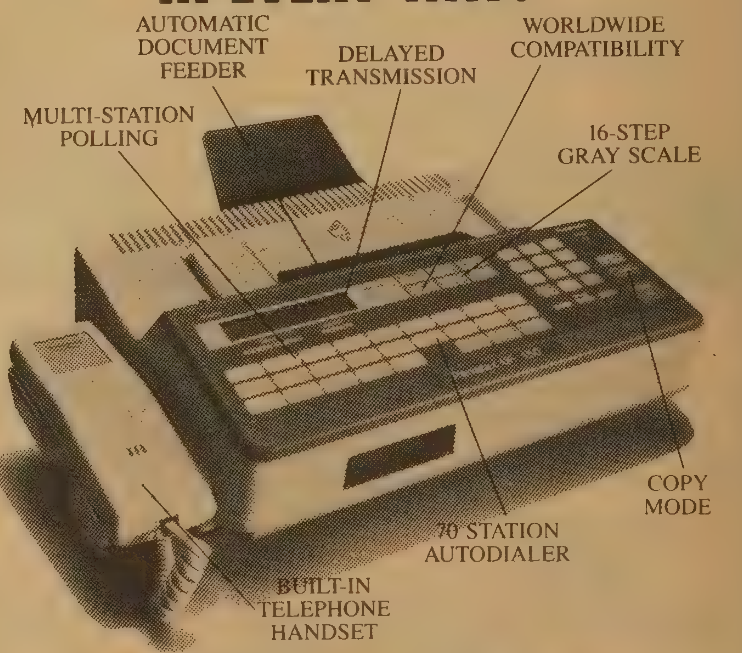

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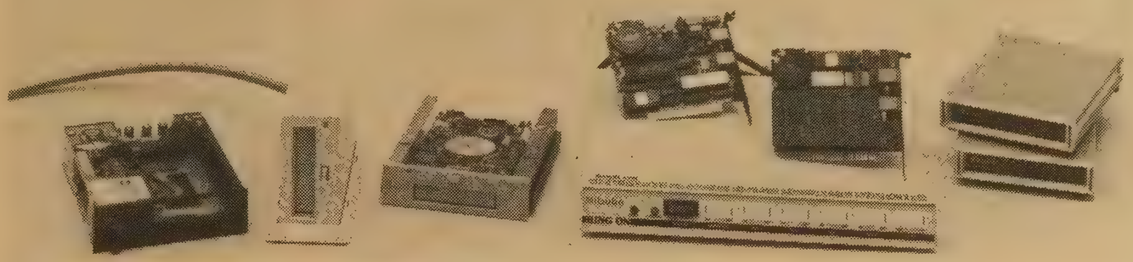

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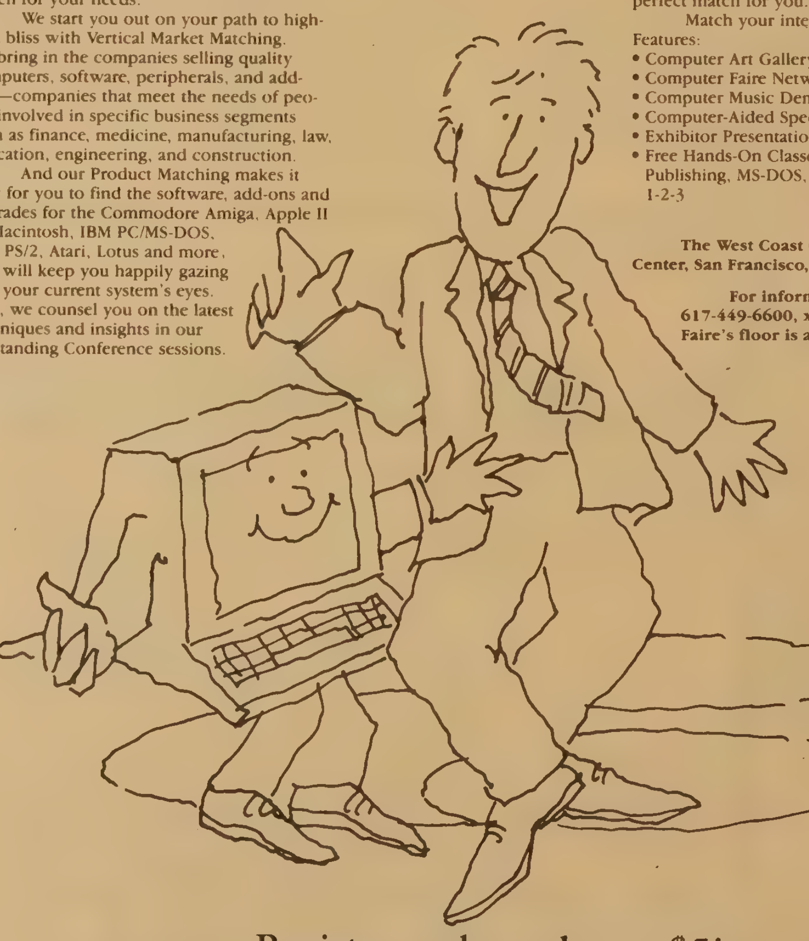

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Family Radio Forum. (415) 562-5483. 300/1200/2400, N-8-1, 24 hours. Download, upload, message, conference on parenting. For teens, singles, etc. Christian TBBS for everybody. Sysop: Richard Yim (voice 415/568-6200). Also (301) 261-1423 (Annapolis, MD), (712) 246-2115 (Shenandoah, IA), (916) 481-6320 (Sacramento, CA), (201) 736-1859 (Newark, NJ), (813) 269-7957 (Okeechobee, FL).

SAC TIBBS. (916) 927-3012. 300/1200 baud, 24 hrs, public and private message base. Many Xmodem downloads. Free to all. TI-99/4A User Group affiliated. Sysop: Woody Large.

The Devil's Domain BBS. (916) 268-1127. 8-N-1, 24 hours, 300/1200/2400 baud. 4 sub-boards including main, music, jokes/war, and elite. Up/downloading. General files. Voting topics, online gaming. A BBS devoted to have fun! Sysop: Asmodeus.

Uncle Tim's Hot Tub BBS. (916) 689-4670. 8-N-1, 300/1200 baud, 24 hours. A clothing optional experience coming live from Almost-Elk-Grove, California. Features: Main Hot Tub, Amiga Tub, Naturism/Nudism Tub, C Language Tub, Politics Tub, Tasteless Tub and Other Boards Tubs. No fees. System is as open as the software will allow. Registration unecessary but nice. We're new and growing! Give us a call, we'd love to hear from you! Sysop: Uncle Tim Beckwith.

Softy's Apple BBS. (916) 383-5244. 300/1200 baud, 8-N-1, 24 hours. An Apple BBS with a technical theme. We have boards for IBM as well. Retail store advertising with discounts for users of this BBS. Sysop: John Hagen.

TREE. (916) 332-4930. 300/1200 baud, 24 hours. Unique tree-structured BBS lets users create their own topics and floors in virtually unlimited quantities. Blazing fast and large, this BBS is one of a kind in its software, hardware and management. Includes the multi-player game BATTLE, where users fight each other for supremacy on the high seas.

The Capitol Connection. (916) 442-0746. 300/1200 baud, 24 hours, 7 bits, even parity, 1 stop bit. The state's first policy-oriented interactive computer bulletin board. Established to test how computer communications can involve citizens in the process of governance. Participants may access over 15 "conferences" listing legislative data, information about the Legislature and the Public Utilities Commission, and other particulars; or they may enter comments and opinions regarding current regulatory issues and debates on the place of computers in civic life. Participants may also send each other electronic mail and download press releases dealing with topical events.

Dynasty BBS. (916) 685-8690. 300/1200/2400 baud, 8-N-1, 24 hours. ComputerRooters Bulletin Board. Sysop: Henry Hoover.

The City Of Grey. (916) 423-3987. 300/1200 baud, 24 hours. Atari 8 bit BBS. Sysop: The Sheriff.

CoCo BBS. (916) 486-1594. 300 baud, 7-E-1, 24 hours. Sysop: Bill Drennon.

ASSOCIATIONS

Community Entrepreneurs Organization (CEO). Business networking group meets in nine chapters around the Bay Area. Share information on tech and non-tech business issues. Topics, brainstorming and a chance to meet others in business. Various week nights. Contact Dr. Crandall, P.O. Box 2781, San Rafael CA 94912, (415) 435-4461. Also new Bulletin Board, (415) 552-9070.

IEEE Computer Societies Committee on Artificial Intelligence and Expert Systems sponsors an open meeting the third Thursday of every month, 7-10 pm, at Foothill College. For more information please call the IEEE council office at (415) 327-6622.

Computer Professionals For Social Responsibility. P.O. Box 717, Palo Alto, CA 94301. (415) 322-3778.

Computer Professionals For Social Responsibility (East Bay). 902 Rose Ave., Piedmont, CA 94611. Contact Bruce Joffe, (415) 768-0288 days, (415) 654-5263 eves.

FOCUS-MED (Federation of Computer Users in Medicine). Open to all physicians and health professionals. Practice management consultant registry. (415) 626-4600.

FOCUS-DDS (Federation of Computer Users in Dentistry). Open to all dentists and dental professionals. Practice management consultant registry. (415) 626-4600.

ITRA Independent Technical Representative Association is an organization dedicated to helping people better understand the Personal Computer (IBM). Contact Tim Jones, 870 Market St. 609, San Francisco, CA 94102, (415) 421-4872 for meeting time and date.

MCTUG (formerly Marin County TRS-80 Users' Group). MS-DOS, CP/M and Tandy users group. Meets 7:30 pm on the first Monday of the month at the Larkspur Masonic Lodge, 1122 Magnolia Ave., Larkspur. Contact Dr. Frank Hovell, 907 Sprucewood Court, Petaluma, CA 94952, (707) 762-5740.

PRACSA (Public Remote Access Computer Standards Association) offers to clubs, schools, and user groups a Speakers Bureau. The purpose of the bureau is to act as a resource to these groups in obtaining speakers of high quality for their meetings. The volunteer speaker is provided free to the group. Contact (408) 262-5150. Meetings 4th Wednesday, 7 pm, Vadic Cafeteria, 222 Caspian Dr., Sunnyvale.

San Bruno Computer Core. Meets Wednesdays at 7:30 pm. Call Pete at (415) 952-9309 for address and info.

San Francisco Computer Society (Formerly the San Francisco First Osborne Group). A society for users of portable computers and/or the CP/M operating system. P.O. Box 783, San Francisco, CA 94101-0783. Meetings on fourth Thursday of the month, St. Aidan's Church, Diamond Heights and Goldmine Dr. in SF. All are invited. Dues $10/yr.

Software Entrepreneurs' Forum, PO Box 61031, Palo Alto, CA 94306. (415) 854-7219.

PATCA (Professional & Technical Consultants Association). 1330 S. Bascom Ave., Suite D, San Jose, CA 95128. (408) 287-8703.

BAYMUG. Bay Area Micro-Processor User Group. General computer group, mostly CP/M and S100. All types of interests welcome. Celebrating our 10th year of meetings! Meetings 1441 Rolins Rd., Burlingame, CA, 1st Thursday, 7:30 p.m. Contact Victor K. Bailey, P.O. Box 248, Pleasanton, CA. 94566. (415) 462-4442.

Byte Hum. A user group for computer buffs concerned with human needs, or social activists who want to learn about computers. Let's put all that knowledge to work for social transformation! Sponsored by the Humanist Party. Contact Rick Wall, (415) 495-6555 or (415) 337-2530.

Society for Technical Communication. STC is a professional organization dedicated to furthering the art of technical

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communication. The San Francisco chapter has about 200 members. Writers, artists and others interested in technical communications are welcome. Meetings 3rd Wednesday of every month, 5:30-8:00 pm; call Sarah Collings, (415) 383-9631 for info or write to P.O. Box 2706, San Francisco, CA 94126.

North Bay Users Group (NBUG). Family computer club devoted to all aspects of computing. Monthly newsletter, library, software demos, etc. Meetings at "CAVE" school, 2nd Tuesday of the month, 7:30-10 pm. Contact Gloria Hutchinson, P.O. Box 7116, Vallejo, CA 94590, or call (707) 644-9327.

Robotics Society of America. Dedicated to disseminating information about robotics, artificial intelligence and machine controls. Mailing address 36 Newell St., San Francisco, CA 94133, (415) 673-2376. San Francisco chapter meets 2nd Monday of the month, 8 pm, Homestead Savings 5757 Geary Blvd. Contact Jim Strope, (415) 552-6564.

Silicon Valley Computer Society. Meetings 7:30 pm, second Wednesday of the month, Duane and Britton SE corner, Sunnyvale. Contact Dick Verna, (408) 262-2679 for information.

PicoNet. A microcomputer users group. Meets on the second Thursday of each month at 7:30 pm at CMX Corp., 2230 Martin Ave., Santa Clara, CA. Formerly specialized in CP/M software, but has broadened its scope to encompass the entire field of computer-related high technology. Extensive library of CP/M pd software; preparing PC-DOS library. Monthly meetings, periodic newsletter, BBS, C language SIG. Call (408) 374-8090 for recorded message on next meeting's topic.

MicroPsy. Users group devoted to the application of microcomputers in the psychological fields. Meetings first Saturday of the month, noon. Call for information: Martin Schaaf, M.S., (415) 454-6761.

C Group of Northern California. Forming C programmer support group. Group's function will be to exchange information, discuss programming techniques and problems, etc. Anticipate monthly meetings at rotating locations. First meeting to be held 7:30 pm, Tuesday evening, November 4th, in Mill Valley. Call (415) 383-7006, or contact Ben T. Choate III, P.O. Box 1533, Mill Valley, CA 94942.

BADGE-Bay Area Developers Group. Meets third Thursday of every month, 7:30 pm, at Stanford University Building 200, Room 002. Contact Tom Rokicki or Bob Alverson, (415) 326-5312 for information.

California Genealogical Society Computer Interest Group. Meets second Saturday of the month, 300 Brannan St., 4th Floor, San Francisco. Call Bill West (415) 235-6107 for information.

Hebrew Users Group., Supporting the use of Hebrew and Hebrew-based languages on computers. Contact Jack Love, (415) 845-7793. Newsletter: $7.50/4 issues ($15/institutions). Write: HUG, c/o Berkeley Hillel, 2736 Bancroft Way, Berkeley, CA 74704.

Gay/Lesbian PC Users Group. We meet on the second Sunday of each month. This is the group where we show our hardware and software and share our knowledge. All levels of users are welcome. Meeting place is the MCC San Francisco, 150 Eureka Street. For more info, contact Jim at P.O. Box 42429, San Francisco, CA 94101, (415) 334-9761.

ComputerRooters. ComputerRooters' purpose is to foster the science of genealogy through educational and research programs. Among other things we show how you can use your computer to further genealogical research. Our library of computer diskettes ranges from useful public utility programs to shareware genealogy programs and is constantly being expanded. Contact Maxine Roberts at P.O. Box 161693, Sacramento, CA 95816. BBS: (916) 685-8690 (Dynasty BBS). 300/1200/2400 baud, 8-N-1, 24 hours.

International Interactive Communications Society (IICS). San Francisco Bay Area Chapter meets the second Tuesday of each month. Meetings alternate between San Francisco and Mountain View. National Office: 2120 Steiner St. San Francisco, CA 94115. (415) 922-0214. San Francisco Bay Area Chapter: P.O. Box 1372; San Carlos, CA 94070. Hot Line: (415) 328-7318.

Bay Area Automated Mapping Assoc. (BAAMA). An association of vendors, users, consultants and students who are interested in computerized mapping and database management. Meetings occur on odd numbered months at various locations throughout the great bay area. P.O. Box 1427, Mill Valley, CA 94942. Contact Jake Armstrong, 1195 Third Street, Room 125, Napa, CA 94558. (707) 253-4351.

NFL-FOOTBALL: Free Open Organization To Better All League Logistics. New power algorithm to develop. Open to all. A bulletin board to go on line on Sept. 13, 1987. Will improve your understanding of the finer points of football performance. Meet once a month to get things started. Join a team research group. Opportunity to brush up on your programming skills, amateur or professional. Call the Construction factory for more information. Or send SASE for full particulars. The Construction Factory, 115 Aspen Drive, Pacheco, CA 94553. (415) 685-9366 or (415) 432-4526.

tecNICA. tecNICA volunteers donate two or more weeks of their time to support Nicaragua with their computer, engineering or other skills. Contact David Greighton, 2727 College Avenue, Berkeley, CA 94705. (415) 848-0292.

AI-Expert System for Business (ESB). Meets 1st and 2nd Sunday in San Francisco. "Investigate real business PC expert system solutions. Determine market opportunities. Guest speakers, discussions and group research/projects. BBS access soon. Quarterly newsletter. Beginners and businesses welcome. Call George Polzer (415) 564-6664 for more information.

Professional Association of Secretarial/Word Processing Services (PASS). A non-profit organization of word processing owners (including home-based services). Dedicated to promoting and maintaining quality and professionalism within the trade. Also provides a network of contacts and a spirit of cooperation. Contact Nina Feldman at 655-4296.

USER GROUPS

APL

APLBUG (APL Bay Area Users' Group) has monthly meetings and a newsletter for people interested in APL (A Programming Language). It meets the third Monday of each month at 7:30 pm in the offices of I.P. Sharp Associates, 220 California Avenue, Palo Alto. Annual dues are $15. Contact Curtis Jones, (408) 292-4060, for information.

AT&T

Bay Area AT&T PC6300 Users' Group. Demos, technical help and more. Meeting time and location varies. Contact Joe Mahoney (415) 586-8376 or Maurice Aranda, (415) 972-5436.

ACTRIX

ACTRIX Computer Enthusiast Society. Membership ($20/yr) provides public domain software, group rates, discounts for owners of Actrix/Access Matrix microcomputers. Meetings at Sunnyvale Community Center, last Wednesday of the month, 7 pm. Contact K. Edward Lynch, 1405 Phelps Ave. #29, San Jose 95117, (408) 756-5104, for more information.

ADAM

Coleco Adam Users Group. For info send SASE to: CAUG, 2316 Stuart St., Berkeley, CA 94705. Voice (415) 549-3437, data (415) 549-3378.

South Bay ADAM Users' Group. Now forming a users' group exclusively for the ADAM enthusiast in the south bay area. Call Steve for more info at (408) 253-4190.

East Bay ADAM Group. Forming an ADAM users group in the East Bay area. Call Tom for more information — (415) 886-2884, or write 6097 Slopeview Ct., Castro Valley, CA 94552.

AMIGA

First Amiga User Group. We offer demonstrations of software and hardware, a public domain library, and general user help at our monthly meetings, which are held on the first Tuesday of each month in Belmont, CA. Meeting address 1300 Fifth Ave., Belmont, CA, 94070, 7 pm, first Tuesday of the month. Contact Tim Avery/Kayvan Pejooh, (415) 595-5452.

First Amiga User Group the South Bay. End-users, enthusiasts, developers and programmers all welcome. Meetings 2nd Fridays, library, 40 N. Milpitas Blvd., Milpitas, 7-9 pm. Contact Jim Thomas, P.O. 1863, Fremont, CA 94538, (415) 651-0201. BBS (415) 659-9169.

ACCESS. The Amiga and Commodore Computer EnthusiastS Society (ACCESS) holds its meetings on the 3rd Wednesday of the month in Room 107 of the Chabot Building in Hacienda Business Park, Pleasanton, CA. Contact Skip Perkins, (415) 443-4778 for information.

Sacramento Amiga Computer Club (SACC). Meets the second Wednesday of each month at the Sacramento Municipal Utility District (SMUD) auditorium, 6201 S. St. just off Hwy 50 at the 59th or 65th St. exit, 7 pm. For more information call George Leone, president, at (916) 944-7400 or write to SACC, P.O. Box 19784, Sacramento CA 95819-0784.

Amiga East Bay Info Exchange (AEBIE). P.O. Box 485, Pinole, CA 94564. For end users in the West County, North and/or East Bay area.

AD-Amiga Developers Group. Meets the last Monday of each month at 6 pm, 2618 Telegraph Ave., Berkeley, (415) 845-4814.

AEBUG-Amiga East Bay User Group. The Original Users Group meets the second Wednesday of each month at 2618 Telegraph Ave., Berkeley, 7 pm. (415) 845-4814 for information; BBS (415) 845-4812.

AUGment, the Amiga User's Group of Silicon Valley. Meets every second Friday, 7:30 pm, at Milpitas City Library, 40 North Milpitas Blvd., Milpitas. Video Production, C programming, and hardware SIGs. Contact Jim Thomas, P.O. Box 1863, Fremont, CA 94538-0186. (415) 651-1160. BBS: (415) 659-9169.

Amiga Addicts Anonymous. Meets the fourth Tuesday of each month, 7:30 pm, at 1331 Concord Ave., Concord (CCC Water District) CA. Q&A session begins at 7:00 pm. For more into, contact Jeff Chase, president, P.O. Box 4669, Walnut Creek, CA 94596. (415) 933-0217. BBS: (415) 283-5469.

AUM-Amiga Users of Marin. Meets the third Wednesday of each month, 7:30, at the College of Marin, Science Center, #190, Kentfield, CA. For more info, contact Bob Galvan, 119 Willow, Corte Madera, CA 94925. (415) 924-5384.

Stockton - Modesto Amiga Users Group (SMAUG). Meets last Wednesday of each month at 3525 Benjamin Holt Drive, Central Lounge, Willow Glen Apts., Stockton, 7:30pm. For information call Rainer Kummerle. (209) 957-8620.

ASCITEC: The Amiga Science and Technology Users Group. Meets second Thursday, 5:00-7:00 pm, at Lockheed in Sunnyvale, B/147, Room 4-C. Scientific/Video Applications. P.O. Box 201, Los Altos, CA 94023. (408) 742-9110.

San Francisco Commodore User Group (SFCUG). Meets the last Thursday of each month, 7:30 pm, at the Embarcadero YMCA near Steuart and Howard. All Commodore computer enthusiasts welcome. PD library, classes, in-depth demonstrations, eprom programmer, BBS-ET (415) 861-4485. Contact Malcolm Lowe, (415) 832-1539.

Northern California Amiga Club. Meets 2nd Saturday of the month at 2:00 pm. Contact David L. Murphy at (916) 472-3237 for meeting place or write P.O. Box 54, Bella Vista, CA 96008.

APPLE

San Francisco Apple Core Special Interest Groups, BBS, large public domain software library, newsletter, help network. For meeting and current events information, call (415) 771-5830. Recorded message 24 hours, live person sometimes during business hours. Leave name and address to receive information. Draconet BBS (415) 781-6645 modem line.

The AppleWorks Users Group. c/o TAWUG Regional Rep., 27421 Berenda Way, Hayward, CA 94544.

SPCA (Society For The Prevention of Cruelty To Apples) Apple user/interest group. Features: Monthly meeting with newsletter, raffle and door prize hard / software, demonstrations, lectures, discussions, $20 per year, pro-rated after June. Meetings last Wednesday of month, 7:30 pm. Contact Paul Meyerholtz for info (415) 490-8209.

Association of Apple 32 Users Macintosh, Lisa. An association of "knowledge workers" who wish to share information on products, applications, and events. User-developed, non-copyrighted software, SIGS, newsletter. P.O. Box 634, Santa Clara, CA 95052.

San Leandro Apple Eaters Users Group. Apple II users group meets the first Thursday of each month at San Leandro High School (room 213). New owners to experienced users welcome: Appleworks, education, hardware/software, telecommunications. Call Open Campus BBS area 11 (415-895-0135) or voice (415-782-9250) for more information.

Pen-Apple (Peninsula Apple Users Group) Meetings 2nd Thursday each month at 7:30 pm, Ampex Corporation cafeteria, 421 Broadway, Redwood City. Contact Pierre Testart, (415) 952-9309.

Diablo Valley Apple Users. Apple II family users and Macintosh users. Special Interest Groups meet monthly. Featuring a library of public domain software collection and our own Club's DOM's, monthly newsletter, group buys of hardware and software as well as monthly demos of new products. Meetings held on 1st and 3rd Friday each month at 7 pm at the Willow Creek Center, 1026 Mohr Lane in Concord. Contact Merle Zmak, president, P.O. Box 5031 Concord, CA 94524, or call (415) 672-7596 for additional information.

South Peninsula Apple Computer Enthusiasts (c/o David Harris, P.O. Box 1257, Palo Alto, CA 94302) meets near the Varian Credit Union, Bldg. 4C, 611 Hansen Way, Palo Alto, at 7:30 pm on the first Tuesday of every month to exchange information about available hardware, software, events, publications, and methods on Apples, and to encourage collaboration on projects. Call (415) 856-9126 answering machine takes 30-second messages.

Roseville Apple Core. Discover your Apple's Core! We meet on the second Wednesday and fourth Tuesday of each month, 7:00, at SMUD Foothills Bldg., Training Room D, at Don Julio and Elkhorn. There are additional SIG meetings for AppleWorks, BASIC, Telcom and Macintosh. We also feature a monthly bulletin, large public domain library, and new member's disk, all for just $12 yearly membership. C'mon out and bring a friend. For more info, contact Bruce McLeod, president, P.O. Box 1377, Roseville, CA 94551. (916) 723-6422.

Apple Sac. (Sacramento) Meetings on first Wednesday and third Tuesday every month at Madison School, 5241 Harrison St. (corner Harrison and Madison Ave. 1/4 mile west of 180 on Madison Ave.), 7:30 pm. Contact Ray Beam, president, P.O. Box 254645, Sacramento, CA 95825, (916) 448-6115 for more information.

Stanislaus Apple Group. You're invited! Stanislaus Apple Group meets 2nd Tuesday each month, 7 pm, Room 124 Ag Bldg, Modesto JC, main campus. We support Apple II and compatibles, Apple III, Mac, Lisa. Newsletter, BBS (209-529-3202), extensive PD software library. More info call (209) 523-7289 (eves).

Santa Cruz Apple User's Group meets at Cabrillo College, Aptos, ILC building, 1:30 pm, second Sunday of the month. For information contact Tim Ruckle, president, (408) 462-3154.

Apple Gardens. New Apple II users group. Share info, programs, group purchases. Brand name disk, new products, software demos and evaluations. Call Tom Turley at (415) 468-4045.

Apple P.I.E. Meets at Lynbrook High School, Room 30, 1280 Johnson Ave., San Jose, 4th Thursdays, 7:30 pm. Contact George Ingalls, P.O. Box 2185, Santa Clara, CA 95055.

ATUNC-Apple Three Users of Northern California. Explanations, demos, large public domain library. Mailing address: P.O. Box 1528, Mill Valley, CA 94942. On Apex and Draconet BBSs.

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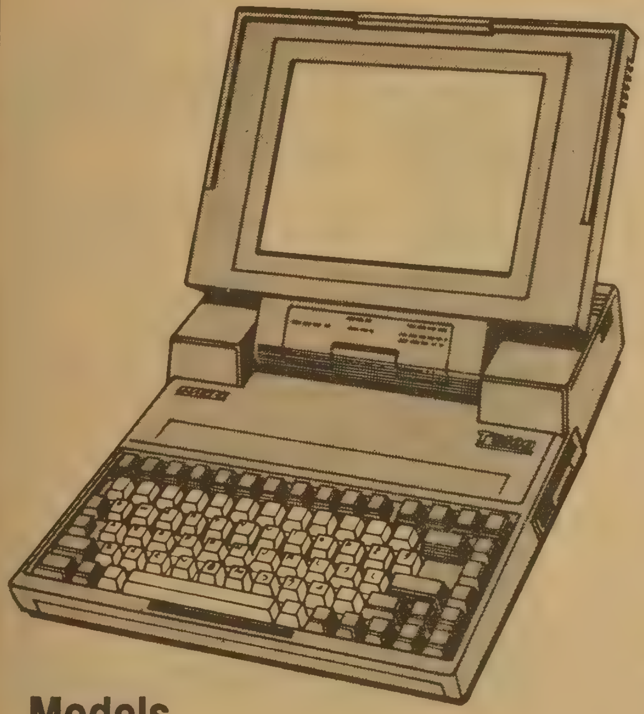

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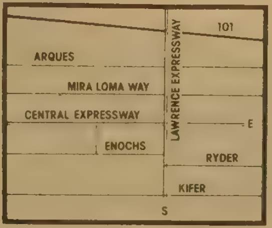

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Apple East Bay Users. Meets the first Tuesday of each month at 2618 Telegraph Avenue, Berkeley, at 7 pm. (415) 845-4814 for information; BBS (415) 845-4812.

Apple Pickers of Sonoma County. Meets second Saturday of each month, 1735 Shuhaw Hall, SRJC, 1 pm. Call for sample newsletter: Mary Lou Mayes, (707) 763-8322.

TVAUG-Tri Valley Apple II User's Group. Meets on the first Thursday of each month, 6:30 at 7079 Commerce Circle, Pleasanton, near the intersection of Hwys. 580 and 680, to discuss our Apple IIs. A special Appleworks group meets on the second Thursday of each month. For more info, contact Dan Balsley or Esther Farnstrom, 9814 Davona Drive, San Ramon, CA 94583. (415) 828-6237 or (415) 829-3672.

Apple Blossom User Group. Meets 1st and 3rd Wednesday of each month at 7 pm at 290 International Circle, San Jose CA 95119. All Apple users welcome. Apple II, II+, IIc, IIe, III and Macintosh. No matter which Apple you have we have a group for you. Contact Ray Enochs, P.O. Box 53323, San Jose CA 95153. (408) 723-9141. ABUG BBS (408) 227-3993.

Microcomputer Users Of Santa Cruz (MUSC). A FOG affiliate, membership open to all persons interested in MS-DOS or CP/M computers. Meetings the second Tuesday of each month. Wheelchair access. Guest speakers, demonstrations, MS-DOS and CP/M software libraries. Info: Barney Bricmont. 1920 Maciel Avenue, Santa Cruz, CA 94062. (408) 476-0504.

ASHTON-TATE

Framework/Editor Bay Area Users Group (FREDBUG) Purpose of the group is to share programming and applications techniques under FRAMEWORK for the business and technical professional. Call for info: Rudi Wiedemann, (408) 730-4159.

San Francisco dBase User Group For advanced users and programmers. Meets once per month. Membership required for attendance. Contact Frank A. De Coster, 1100 Gough St., San Francisco, CA 94109, (415) 474-6693.

East Bay dBASE Users Group. Meets 3rd Sunday, 1 pm. Call Darrell Bross (415)873-7522 or Alexandra Saur (415)893-7637 for meeting address.

dBase II/III SIG of SF PC Users Group meets third Monday of each month, 7-8 pm, Fort Mason, San Francisco. Contact Ron Freshman, (415) 459-6613.

DBDVLPRS (dBaseIII Program Developers). Call for information on meeting time and location: Gil Orlik, (415) 931-0377, 2240 Buchanan St., SF 94115.

ATARI

ABACUS (Atari Bay Area Computer Users Society) All ATARI users or prospective users are welcome. Membership ($15/year) provides public domain software, low cost blank disks, monthly newsletter, group prices on hardware and software, help from experts, low cost classes for beginners. Meetings first Saturday of the month at 19th Ave. Diner, 19th and Lincoln Avenues, S.F. Call for times. Contact Bill Zinn at 753-8483.

A.C.M.E. (Atari Computer Marin Enthusiasts) Meets monthly in Marin, third Thursday evening monthly from 7 pm on. Gallinas School, 177 N. San Pedro Rd., San Rafael. Contact Bruce Frank, (415) 435-6020, P.O. Box 222, Tiburon, CA 94920.

Diablo Valley Atari Computer Enthusiasts (D.A.C.E.) Meets the first Thrusday of the month at 7:00pm at the Contra Costa Water District Building conference room in Concord. Meetings free. $20 yearly membership comes with newsletter, discounts, raffle tickets. For information contact Mike at (415) 798-6565.

Bay Area Atari Users Group We have a 24-hour 300/1200 baud BBS at (408) 249-7722. Meetings at Bracher School Cafeteria, corner of Bowers and Chromite, Santa Clara, CA, first Monday of the month. Contact Frank Nagle, P.O. Box 50459, Palo Alto, CA 94303, (415) 791-5461 for more info.

San Leandro Computer Club Although open to all computer users, this group is primarily oriented to Atari computer owners. Our club is considered one of the best in the country, worthy of consideration by both novices and experts. Meetings 1st Tuesday of the month at San Leandro Community Library, 300 Estudillo Ave., San Leandro, CA. Contact Phil Mitchell, P.O. Box 1525, San Leandro, CA 94577-0152 for more info, or call (415) 351-2208.

COAST User Group (California Original Atari ST). Public domain disks, MIDI, support, newsletter, help for the Atari ST line of computers. Advice and programs not to miss. Meetings on the 3rd Wednesday of each month, at The Berkeley Conference Center, 2105 Bancroft in Berkeley, CA, 7:00 pm, 6:30 for beginners. $1.00 admission for non-members. EaST COAST meets 2nd Tuesday of the month at 1015 Esther Drive, Pleasant Hill, 7:30 pm. Members only. Dues $30.00 yr. Contact Chuck Thorp, president, 1015 Esther Drive, Pleasant Hill, CA 94523, (415) 945-1949 for information.

Redwood Atari Group (R.A.G.) Meets 4th Saturday, 1-4 pm, at Coddingtown Meeting Room, 1100-B Coddingtown Center, Santa Rosa. Contact Mikkel Lawrence, (707)585-3949, 21 Creekwood Sq., Rohnert Park 94928.

E.S.C.A.P.E. (Enthusiastic Santa Cruz Atari Programmers Exchange). Full software and hardware support of both the ST and 8-bit computers. For information call Chris Smart at (408) 335-4384.

ATTACHE

Attache UNL Otrona may be dead, but the Attache Users News Letter Lives ON!! Contact Jim Ayers, 301 Poplar St., Mill Valley, CA 94941. (415) 388-4805. Meetings 7:30 pm, 2nd Wednesday.

First Attache User Group News. Support, news, and cooperation for users of Otrona Attache and 2001 portable computers. Since '82. Contact Charles Raisch, 1827 Haight St. Suite 16, San Francisco, Ca 94117, (415) 221-3415.

AUTOCAD

AutoCAD Users Group. Call Gen Katz (415) 530-8870 for information about future meetings.

AutoCAD User Group. Call Volker Ackermann, (415) 331-9466 for information.

AutoCAD Users Group of Santa Cruz. Meetings held at Citicorp conference room, 806 Ocean Street, Santa Cruz, 7-9 pm, 1st and 3rd Tuesday of the month. Call (408) 462-0448 for information.

BASIS

Bay BUG Basis 108 Users meet every first Friday of the month at College of Alameda Computer Room, 7:30 pm. Contact Roger Bernhardt, 536 Mission, San Francisco or call (415) 221-0262 for more information.

BONDWELL

Bondwell Users Unite! Trying to start group, need your help. All levels welcome. Meeting address 405 Stierlin Rd. #17, Mountain View. Time and date to be announced. Call Tom Gatlin at (415) 961-0450 for more information.

BPI

Bay Area BPI Users Group meets the fourth Tuesday of each month. For more information contact Mitch Paioff, 5097 Tisdale Way, San Jose, CA 95130, (408) 866-4310.

CANNON

Cannon AS 100. Anyone who owns a Cannon AS-100 computer and is interested in forming a group to share problems and solutions write HTF-4111 Hilltop, Vacaville, CA 95688.

CASIO

Casio Research Project. Discussion and collaboration; creation of plug-in expansion board using VLSI chip. Share programs. Meetings TBA. Contact Julius M. Zebrowski, (415) 969-9458.

CCS DESIGNER

CCS Designer CAD User Group. CCS Designer user group forming. All those interested call (415) 692-7250.

COMMODORE

San Francisco Commodore Users Group (SFCUG). Meets the last Thursday of each month, 7:30 pm, at the Embarcadero YMCA near Steuart and Howard. All Commodore computer enthusiasts welcome. PD library, classes, in-depth demonstration, eprom programmer, BBS-ET (415) 861-4485. Contact Malcolm Lowe, (415) 832-1539.

Diablo Valley Commodore Users Group Meetings Contra Costa Water District Auditorium, 1331 Concord Ave., Concord, CA, second Thursday of month at 7:30 pm. Write DVCUG, P.O. Box 27155, Concord, CA 94527, or call (415) 686-4049 for more info.

Napa Valley Commodore Computer Club Meets first and third Mondays, 7:30 pm, at Northwood Elementary School, 2214 Berk St., Napa. Take Redwood Road to Dover St. to Berk St. Contact President Dick Bull (707) 257-3773 or vice-president Roger Pruym (707) 253-1690 for more info.

Lake County Commodore Users Group Contact Al Reuss, P.O. Box 388, Clearlake, CA 95422.

Marin Commodore Club Meets at Redwood High School, Corte Madera. Visitors welcome. Contact Elmer Johnson for information: 665 Las Colindas, San Rafael, (415) 479-0426.

The Commodore Connection User Group. (CCUG) Meetings at Homestead Savings, 14th and "A" St., Antioch, 3rd Monday of the month, 7:30 pm. Contact Walt Moxely, 2229 Santa Maria Drive, Pittsburg, CA 94565. (415) 458-3318. BBS: (415) 458-1005, Commodore only, 24 hours, 300/1200.

Commodore User's Group of Hayward. For information write P.O. Box 2072, San Leandro, CA 94577.

NBUG (North Bay Users Group). Contact Jim Stephens, president, 124 Delgado St., Vallejo, CA 94591, or write P.O. Box 7116, Vallejo, CA 94590.

Santa Rosa Commodore Users Group. Walter Saures, President, 333 East Robles Ave., Santa Rosa, CA 95407-7921. (707) 584-7009. Information line, (707) 526-6464 SRCUG-BBS.

Family Roots Searchers. Using Commodore SX-64 computer, Dynax DX-15, PractCalc II, Word Pro 3 Plus, Family Tree. Meetings by appointment only. Vera Ross, Atchison Village, Richmond, CA 94801-2942, (415) 235-8716.

PLUG (The Plus/4 Users' Group). Dedicated solely to support of the Commodore Plus/4. No regular meetings, 200 members in US, Canada, Mexico, and Europe. Newsletter, public domain software library. P.O. Box 1001, Monterey, CA 93942.

Silicon Valley Commodore Computer Club. Meets 4th Wednesdays, H.P., 5301 Stevens Creek Blvd. at Lawrence, 7 pm. Contact Roger Weiss, (408) 942-2442.

ACCESS. The Amiga and Commodore Computer EnthusiastS Society (ACCESS) holds its meetings on the 3rd Wednesday of the month in Room 107 of the Chabot Building in Hacienda Business Park, Pleasanton, CA. Contact Skip Perkins, (415) 443-4778 for information.

C.O.W. Commodore Owners Workshop. Meets at the San Bruno Rec Center (in San Bruno Park) the third Thursday of every month from 7-10 pm. Machines welcome. We have a huge PD library that users can check out. We usually have demos each meeting; we have BASIC programming classes and help each other along. For further information call the San Bruno Parks and Rec at (415) 588-1201.

Fairfield Commodore User Group. Meetings Solano County Education Bldg., 1st and 3rd Mondays. Contact Ben Harris, 1182 Dana Dr. Fairfield 94533, (707) 422-1669.

FUNHUG — Fremont, Union City, Newark, Hayward Users Group. A user organized, user operated, user group not affiliated with any computer or software manufacturer or distributor. We have a Commodore and an IBM section in our group. Group meets every third Wednesday at 7:30 at 5445 Central Ave., Suite 4, Newark.

64/MORE, San Jose Chapter. Meets the first Sunday of each month from 6 pm to 9 pm at Mercury Savings and Loan, 859 Blossom Hill Road, San Jose. For further information call (408) 945-4327 or Night Owl BBS (408) 253-2295.

64/MORE, North Valley Chapter. Meets the second Saturday of each month from 10 am to noon at the Milpitas Public Library, 40 Milpitas Boulevard, Milpitas. For information call (408) 945-4327 or Night Owl BBS (408) 253-2295.

64/MORE, Cupertino Chapter. Meets the third Saturday of each month from 3 pm to 6 pm at the Saratoga Public Library, 13650 Saratoga Avenue, Saratoga. For further information call (408) 945-4327 or Night Owl BBS (408) 253-2295.

64/MORE, Campbell Chapter. Meets the fourth Tuesday of each month from 6:30 pm to 9:30 pm at the Santa Clara County Public Health Building, 2220 Moorpark Avenue, San Jose. For further information call (408) 945-4327 or Night Owl BBS (408) 253-2295.

Microcomputer Users Of Santa Cruz (MUSC). A FOG affiliate, membership open to all persons interested in MS-DOS or CP/M computers. Meetings the second Tuesday of each month. Wheelchair access. Guest speakers, demonstrations, MS-DOS and CP/M software libraries. Info: Barney Bricmont. 1920 Maciel Avenue, Santa Cruz, CA 94062. (408) 476-0504.

CO-OP: Commodore Owners of the Peninsula. Meets third Saturday of the month, 1:00-4:00 pm, at the Foster City Recreation Center, Room 103, 650 Shell Blvd., (corner of E. Hillsdale Blvd.), Foster City, CA 94404. Membership $25/year. Non-members, $2/meeting. Contact P.O. Box 280495, San Francisco, CA 94128. (415) 595-8770.

CLIPPER

Bay Area Clipper User Group. The newly formed BACUG is the only user group in Northern California affiliated with Nantucket, developers of Clipper. It will operate as a SIG of the San Francisco PC Users Group. All persons interested are invited to attend the meetings. Entry is free to BACUG members; guests will be charged $5. For meeting times and locations contact Mike Pelladino at (415) 751-2719.

COMPAQ

SF Compaq Users Group is now a SIG of the SF IBM PC Users Group. For information please call D. Blow at (415) 221-2764.

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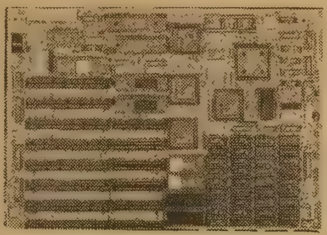

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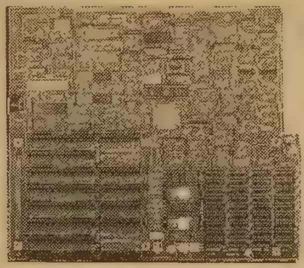

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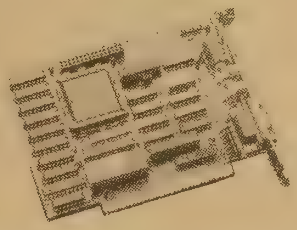

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Berkeley Compupro. Berkeley Compupro User Group meets 4th Thursday every other month. Company Reps attend meetings. For more information call Barry at (415) 665-4733.

Hayward Compupro Users Group. Meets 3rd Saturday of every month in Hayward, California. Sponsored by Automation Sciences International. Meetings held at 22532 Foothill Blvd., Hayward, between 'B' and 'A' Streets. You may call (voice) (415) 886-2980 or (modem) (415) 886-4734. The CP/M Connection for further information." Topics include: hardware & software problem identification and solution, upgrades, new products, CP/M, CCP/M, ZCPR and getting the most out of application software. Other users and interested parties are welcome. Group founder: Michael D. Lipshutz.

COMPUTER ASSOCIATES

Computer Associates Users Group of Northern California. Meets third Wednesday of every other month, 6:00-7:30 pm, at the Slovenian Hall, 2101 Mariposa Street, San Francisco. For local Computer Associates Software users looking for extended support. Sponsored by J.C. Lukrich & Co. Contact Beth E. Markus (415) 864-6770.

DATAFLEX

Dataflex User Group. For more information call Alex at (415) 433-7944.

DEC

Silicon Valley DEC PC Users Group. Meets 2nd Wednesdays 7–9 pm at Kierulff Systems 1180 Murphy Avenue, San Jose. Contact Gary Catalano (408) 275-1133.

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EAGLE

Eagle Computer Users Group. P.O. Box 3381, Saratoga, CA 95070, (408) 972-1965. General meetings are held on the second Saturday of the month at Tandem Computer H.R. Training Room at 10300 N. Tantau Ave., Cupertino, from 9:30 am to 12:00 noon.

Screaming Eagles User Group For 8 and 16 bit Eagles. Quarterly newsletter, public domain disk. On CompuServe (CLUB) Sec. 3. $10/year individual, $20/year business. 101 Parnassus #1, San Francisco, CA 94117. (Voice) (415) 661-4362.

Eagle Computer Users Group —ECUG. Meets 2nd Mondays, 7 pm, 6132—66th Ave. (Southgate Library), Sacramento. Contact W. Jud Boies, P.O. Box 163506, Sacramento, CA 95816, (916) 443-1060.

ENABLE

ENABLE Users' Group. Supporting users of Enable, the integrated software package. Monthly meetings in San Francisco (contact Evan Christensen, 415/469-1863) and Walnut Creek (contact Sandi Baker, 415/944-0426).

EPSON

Epson Users of San Francisco Bay Area Epson group has nationally circulated newsletter Valnews: 400 members mostly QX-10 owners, growing software library. Meetings focus on mutual support. Mainly Valdocs and other applications. Meetings first Thursdays. 7 p.m. Fort Mason Center, Bldg. C, Room 205, San Francisco. Contact Alan Magary, 904 Irving St., Suite 271, San Francisco CA 94122, (415) 661-9270.

Napa Valley Epson Users Group 1307 Hestia Way, Napa, CA 94558, (707) 253-8727.

FORTH

FORTH Interest Group, Berkeley Chapter. Meets 2nd Saturday of the month at 1 pm, 10 Evans Hall, UC Berkeley. Contact Mike Perry, (415) 644-3421.

FORTH Interest Group, Monterey/Salinas Chapter. Contact Bud Devins, (408) 633-3253.

FORTH Interest Group, Sacramento Chapter. Meets 2nd Tuesday of the month, 7 pm, 170B 59th St., Room C. Contact Tom Ghormley (916) 444-7775.

FORTH Interest Group, Bay Area Chapter. Meets 4th Saturday of the month, 10 am advanced, 1 pm beginning, at ABC Christian School Auditorium, Dartmouth and San Carlos Ave., San Carlos (408) 277-0668.

FORTH Interest Group, Stockton chapter. Contact Doug Dillon (209) 931-2448.

GAVILAN

Gavilan User Group. Meets 2nd Thursday, 7 pm, Lockheed Bldg 162. Sunnyvale, CA. Contact R.W. Brown, 780 Manx Ave., Campbell, CA, (408) 379-2774. Gavilan BBS (408) 374-3974, 300/1200, 24 hours, free.

HEATHKIT

San Jose Heathkit Users Group. Meets first Wednesday at 7 pm at the Heathkit store on South Bascom Ave. in Campbell.

B.A.H.U.G. Bay Area Heath Users. Heath/Zenith computers, ZDOS, PC-DOS, CP/M and MS-DOS. Meetings at 2001 Middlefield Rd., Redwood City, CA, 7 pm, 2nd Tuesday of each month.

NBHZUG North Bay Heath/Zenith Users Group. Devoted to Heath/Zenith computers in specific and MS-DOS, CP/M computers in general. Beginners and advanced. Meeting place varies, time 2nd Saturday, noon. Contact Martin Schaaf, (415) 454-6761 for information.

HEWLETT-PACKARD

Bay CHHU, HP Laptop & Handhelds. Meets 2nd Saturday of the month. Contact Jim Horn (707) 523-4890 or Michael Felsenstein (415) 564-8279.

INTEREX is the International Association of Hewlett-Packard Computer Users, with affiliated users worldwide approaching 10,000. Acting as an information resource for users of HP computers (HP3000, 1000, 900 and Series 100), INTEREX maintains libraries of user contributed software. The software is available through the CSL membership categories. INTEREX has three publications, one or two for each of the categories. Phone (408) 738-4848 or write User Services Department, 680 Almanor Ave., Sunnyvale, CA 94086.

IBM

South County PC Users Group Meetings held second Thursday of each month at St. Clements School Library, 730 Calhoun St., Hayward. Public Domain and shareware disks, newsletter. Contact Bob McCloud (415) 537-9899.

Silicon Valley Computer Society. New users SIG, 7:30 pm, 2nd Wednesday at Hewlett-Packard Co., Bldg. 50, 5301 Stevens Creek Blvd.; call Dick Meyer, (408) 723-0159. dBASE III SIG, 7:30 pm, 4th Thursday; call Thaine and Barbara Anderson, (415) 345-0152. WordPerfect SIG 7:30 pm, date variable; call Martin Van Derpool, (408) 238-8434. Software tools and graphics SIG, 7:30 pm, 4th Tuesdays; call Hal Sampson, (408) 866-7833. Artificial Intelligence SIG, 7:30 pm, 2nd Thursdays; call Kent Byron, (415) 656-0410. Telecom SIG, 7:30 pm, 1st Monday; call Scott Sawicki, (408) 243-8781. Lotus 1-2-3/Symphony SIG, 7:30 pm, 3rd Thursday; call Bill Welch, (408) 247-3405. C programming SIG, 7 pm, 3rd Tuesday; call Fletcher Johnson, (408) 946-0960.

California PC LAN Users Group, 1625 The Alameda, Suite 511, San Jose, CA 95126. (408) 289-1711.

Diablo Valley PC. An IBM PC User Group, monthly meetings, newsletter and public domain software library. Contact Jim McDonnel, president, 2261 North Main St. 117, Walnut Creek, CA 94596, (415) 933-1270.

The Bay Area Computer Society Emphasis on IBM PCs, networking and multi-user systems. P.O. Box 20583, Oakland, CA 94604, (415) 839-5786.

IBM PC Users Group of the Redwoods. Meets on the second Thursday of the month, 7:00 pm, at Santa Rosa Veterans Memorial Bldg. Anyone interested in PCs and/or compatibles is welcome. Contact Michael Adams, P.O. Box 1009, Rohnert Park, CA 94928. (707) 664-8320. BBS (707) 546-4938.

Sacramento PC Users Group. Over 1000 members. Meetings at Holiday Inn Holidome, 5321 Date Ave., 7 pm, 3rd Wednesday. Contact Barney McCauley, P.O. Box 685, Citrus Heights, CA 95610, (916) 484-1048, or call the club number (916) 332-1944.

SF PC jr User Group meets monthly. Lectures and discussions on the usage of IBM PC jr software and hardware. Software and books library. For more information please send SASE to 2336 Market St., Suite 20, San Francisco, CA 94114. Meetings at 1550 Bay St., SF, every first Sunday at 7:30 pm.

San Francisco PC Users Group. Largest SF group focusing on IBM and compatibles. Over 150 disks of public domain software, excellent monthly newsletter. 800+ members, $30 yr. Write 3145 Geary Box 155, San Francisco, CA 94118. Meetings 8 pm, 3rd Mondays, Bldg A Fort Mason.

Monterey Bay PCjr Users Group. Meets at Legacy Computers, 431 Tyler, Monterey, CA 93940. Usually meets second Thursday of the month. Contact Lloyd Reece, (408) 899-5795. Mail to Box 1191, Seaside, CA 93955.

Valley PC Users Group. Individuals and corporate users of the IBM PC and compatibles; guest speakers from major vendors, public domain software, exchange problems and solutions. BBS 24 hours (209) 952-5021. Meeting address 731 Brookside Road, UOP School of Pharmacy, Rotunda Bldg., Stockton, 7 pm, 1st Tuesday. Contact Francis Pillow, P.O. Box 77748, Stockton, CA 95207, (209) 478-9697.

FUNHUG PC—Fremont, Union City, Newark, Hayward User Group. For recreational/home users of IBM PC and compatibles. We meet on the third Wednesday of each month at the Fremont Main Library, 39770 Paseo Padre, Fremont, CA at 7:30 pm. We have software/hardware demonstrations and visits from manufacturers. Our library contains over 350 disks of public domain software. There are no dues, beginners are always welcome. For more info and map send SASE to Russ Fisher, 36015 Pizarro Dr., Fremont, CA 94536.

Marin-Sonoma PC Users Group. Meets last Tuesday of the month, 7:30 pm, in the Whistlestop building, 930 Tamalpais St., San Rafael, CA. Park in Savings and Loan parking lot across the street. Classes, SIGs, 24 hour BBS at 415/927-1216. Emphasis on business applications and solutions. For additional information contact John Hawkins (415) 525-8500, P.O. Box 6476, San Rafael, CA 94903.

Santa Cruz Computer Society. Meets on the third Thursday of the month, 7:00 pm, at Center 2000, 2nd floor of the Palomar Hotel, 1344 Pacific Ave., Santa Cruz. For beginning to advanced users and programmers. Demos, reviews, solutions and classes on commercial, shareware and public domain programs. Spe-

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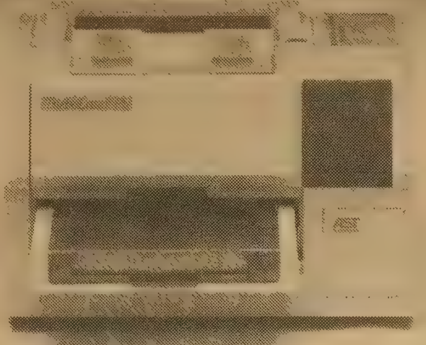

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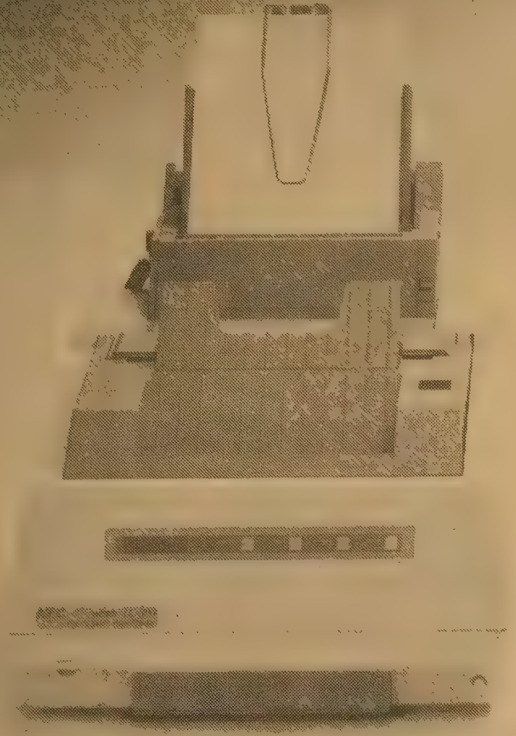

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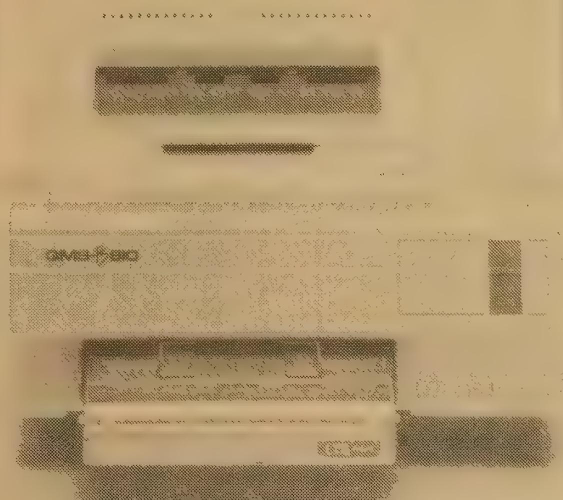

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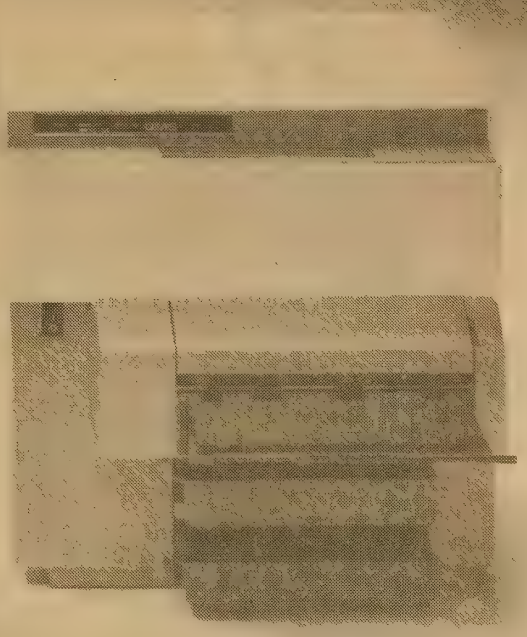

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San Francisco Computer Society, a CP/M and MS-DOS user group, meets on the first Monday of each month, 7:00 pm, at Homestead Savings, 5757 Geary Blvd., San Francisco. Membership is free, meetings are free and open to members and non-members. Member of FOG. For more information call Ralph Gallagher at (415) 929-0252.

IBM Compatible User Group of Silicon Valley. Meets monthly to share information about IBM compatible or clone computers. BBS (408)287-8326, 300/1200, 5:30 pm-7:30 am M-F, 24 hours weekends. Call (408) 287-8325 for information, or write to 1515 The Alameda, Suite 303, San Jose, CA 95126.

Microcomputer Users Of Santa Cruz (MUSC). A FOG affiliate, membership open to all persons interested in MS-DOS or CP/M computers. Meetings the second Tuesday of each month. Wheelchair access. Guest speakers, demonstrations, MS-DOS and CP/M software libraries. Info: Barney Bricmont. 1920 Maciel Avenue, Santa Cruz, CA 94062. (408) 476-0504.

Berkeley P.C. Users Group. Meets on the 2nd Monday of each month, 7:00 pm, at 2618 Telegraph Avenue, Berkeley. For more info, contact Mel Mann, 1145 Walnut Street, Berkeley, CA 94707, (415) 527-2177 or Andy Wong, 2618 Telegraph Ave., Berkeley, CA (415) 845-4814.

IBM AT/XT Clone Users Group. Meets second Monday of every month, 7:00-9:00 pm, at Bldg. 'E', room 287, Fort Mason Center in San Francisco. $25 annual membership includes newsletter. Group focuses on clone hardware and support. Contact Philip James, P.O. Box 15000/324, San Francisco, CA 94115. Voice: 861-9321. BBS: (415) 552-9070.

Mid-Peninsula IBM PC Club. For IBM employees only. Contact George Halle (415) 855-3474 or Scott Maiden (415) 855-4509.

SACTO PCjr Group. Meets on the 4th Tuesday of each month at SMUD Bldg., 59th and Folsom Blvd., Sacramento, at 7:15pm.

CADVANTAGE - Cadvance Users Group. Meets at Mitchell Park Community Center, 300 Middlefield Road, Palo Alto. 7/22/87, 10/21/87, 1/20/88, 7:00pm to 10:00pm. PC CADD for architectural/facility designers. Current users and/or those contemplating CADD are welcome. Meetings take place once every quarter.

BAYPUG-Bay Area P-CAD Users Group. Meets P-CAD 1290 Parkmoor, San Jose. 7/30/87, 10/29/87, 1/28/88, 9:00am to 1:00pm. PC CADD for PCB/CAE Designers. Current users and/or those contemplating CADD are welcome. Meetings take place once every quarter.

The Blacksmiths-ANVIL 1000 MD Users. Meets at Mitchell Park Community Center, 300 Middlefield Road, Palo Alto. 7/15/87, 10/14/87, 1/13/88, 7:00pm to 10:00pm. PC CADD for Mechanical Drafting and Engineering designers. Current users and/or those contemplating CADD are welcome. Meetings take place once every quarter.

Stanford/Palo Alto PC Users Group. Meets last Wednesday of the month at 8:00 pm, Polya Hall, Turing Auditorium (Room 111), Stanford.

The IBM & Compatibles User Group (ICUG). A mail based group which has a monthly newsletter. Not for PCjrs. Large public domain software library, with great bargains. Members communicate through newsletter. $5.00/yr. fee. It's Worth It! Contact Daniel Tuma, 30 Arjang Ct., Alamo, CA 94507-2041.

Monterey Bay User Group IBM-PC (MBUG). Meets third Thursday of the month, 7:00 pm, at Seaside Library, 550 Harcourt Ave., Seaside, CA. Also Special Interest Groups meet every Wednesday, 7:00 pm, at 542 Archer St., Monterey, CA. A writer's SIG meets on the fourth Thursday of the month, 7:00 pm, at the Monterey Public Library, 625 Pacific St., Monterey. We have a large shareware library, annual auction and Christmas party. Contact Fred Brownell at (408) 373-6345.

KAYFUN: Peninsula Computer Club. Meets second Thursday of every month at 7:30 pm in the ground floor social room, 222 Laurel St., #310, San Carlos. Supporting the MS-DOS & CP/M communities. Bimonthly newsletter, large CP/M and MS-DOS public domain libraries, and computer publication library. See BBS listing for KAYFUN BBS. Contact Larry Welling at (415) 593-9981.

East Bay Users Group (EBUG). IBM, compatibles and clones. Meets 3rd Wednesday of the month (except August) at Merritt College Staff Lounge (R-7) Computer Lab, Merritt College, 12500 Campus Drive, Oakland 94619. Call (415) 436-2453 for more information.

KAYPRO

BAKUP (Bay Area Kaypro Users and Programmers). One of largest Kaypro user groups in country. Meet 3rd Tuesday of month, 7:15 pm, at 846 Masonic, Albany, CA. We support our RBBS/RCPM for members, publish a monthly newsletter, have a 40 volume software library, and a lot of fellow KP'ers! Write for info, $10 per year to join. Contact Woody McPheeters. P.O. Box 20181, Oakland, CA 94620. (415) 548-3126. BBS: (415) 849-9389.

KAYFUN Peninsula Kaypro Users Group meets second Thursday of every month at 7:30 pm in the ground floor social room, 222 Laurel St., #310, San Carlos. Bimonthly newsletter, large CP/M and MS-DOS public domain software libraries, and computer publication library. See BBS listing for KAYFUN BBS. Contact Larry Welling at (415) 593-9981.

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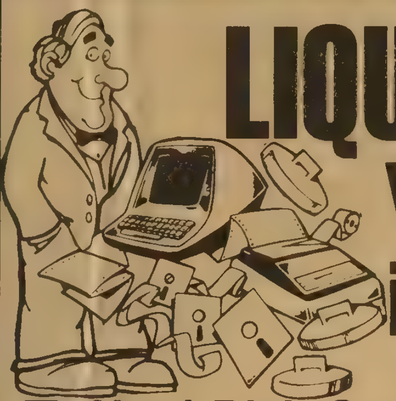

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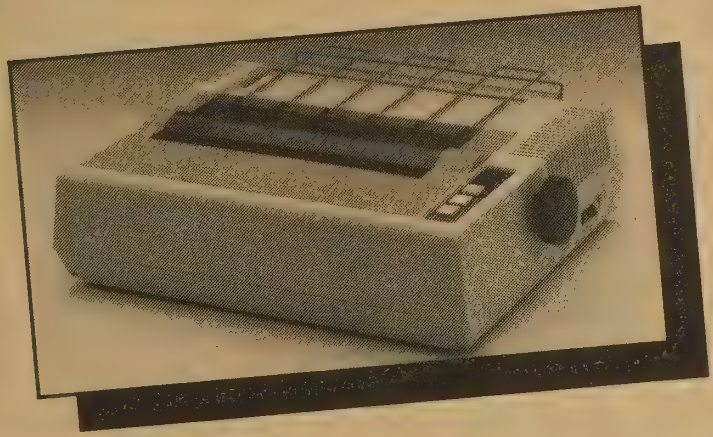

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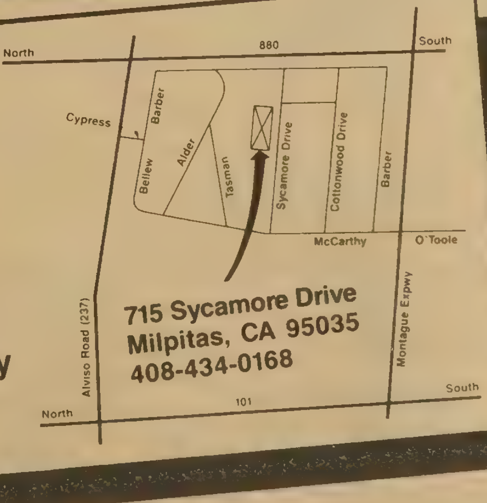
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South Bay Kaypro Users Group (SBKUG). Meetings at 10400 Torre Ave., Cupertino. We have an extensive library of public domain software, including over 200 diskettes of the SIG/M library. The floor is open for questions at each meeting, and we welcome new members at all levels of ability. Bring your machine, or at least your diskettes. For meeting night call Chuck Hansen at (408) 257-5244, or write P.O. Box 390088, Mountain View, CA 94039-0088.

HAYPROS. Kaypro User's Group—informal format, dealer supported. Meets at Computer Insights, 40957 Grimmer Blvd., Fremont, CA 94538, 1st Tuesday each month. Contact Ted de Castro, 18841 Vineyard Rd., Castro Valley, CA, (415) 581-8882.

Microcomputer Users Of Santa Cruz (MUSC). A FOG affiliate, membership open to all persons interested in MS-DOS or CP/M computers. Meetings the second Tuesday of each month. Wheelchair access. Guest speakers, demonstrations, MS-DOS and CP/M software libraries. Info: Barney Bricmont. 1920 Maciel Avenue, Santa Cruz, CA 94062. (408) 476-0504.

San Francisco Computer Society, a CP/M and MS-DOS user group, meets on the first Monday of each month, 7:00 pm, at Homestead Savings, 5757 Geary Blvd., San Francisco. Membership is free, meetings are free and open to members and non-members. Member of FOG. For more information call Ralph Gallagher at (415) 929-0252.

Silicon Valley FOG. Supporting all types of CP/M micros. Two meetings monthly, one at the Campbell Public Library, 70 North Central Ave., Campbell, and the other at the Saratoga Community Library, 13650 Saratoga Ave., on the southeast corner of Saratoga and Fruitvale Avenues, Saratoga. Call (408) 371-8699 for further information.

LEADING EDGE

Ventura County Leading Edge User Group. Meets 2nd Saturday of the month, 10:00 am, at Camerillo Library, 3100 Ponderosa Drive, Camarillo, CA. Contact Walt Yates at (805) 983-2199 for information.

MACINTOSH

EBMUG (East Bay Macintosh User's Group) Friendly, informal. Public domain software and computer book library. Information exchange. Speakers. Product discounts. Free admission. Meets at West Berkeley Public Library, 1125 University Ave., Berkeley, CA, third Tuesday of each month at 7:30 pm. Contact Shep Tamler at P.O. Box 7816, Berkeley, CA 94707-0816.

Bay Area MacForum New and experienced Macintosh users. 2 monthly meetings, one in conjunction with San Francisco Apple Core, and one in Concord. For meeting and current events information call (415) 771-5830. Recorded message 24-hours, live person sometimes during business hours. Leave name and address to receive information.

Berkeley Macintosh User Group (BMUG). 1442A Walnut St., #62, Berkeley, CA 94709. General meetings: every Thursday 6 pm, Physical Sciences Lecture Hall on UCB campus. SIG meetings on Mondays, Tuesdays and Wednesdays. Call for more info and this week's topic. (415) 849-9114. BBS (415) 849-BMUG.

MacNexus. Sacramento's Macintosh User Group. 150 members, but still informal. Extensive public domain collection. Contact Gail McGovern, P.O. Box 163058, Sacramento, CA 95816, (916) 446-2411. Meetings 3rd Thursdays, 6:30 pm, Almond Plaza, 17th & C, Sacramento.

MacProgram Unlimited. Meets monthly. Informal with hands-on testing of different programs. Public domain and standard programs in rental library. Meets Albany YWCA, Kains and Solano, Saturday 9:30 am. Contact William Gong, P.O. Box 7704, Berkeley, CA 94707. (415) 527-1756.

Stanford Macintosh Users Group (SMUG) meets on the first Monday of the month at 7 pm in Kresge Auditorium, Stanford Campus. Meetings include speakers, discussions, answers and sale of library disks and other SMUG items. The Excel, Novice, Developer's, Japanese Word Processing Groups each meet twice monthly. SMUG publishes a newsletter and runs a BBS. Call the SMUG hotline at (415) 723-SMUK for a listing of current events. Stanford Macintosh Users Group, P.O. Box 2354, Stanford, CA 94305-0135.

Club Mac of Monterey. Macintosh User Group of Monterey Bay Area. Membership with monthly newsletter $25. Meetings 7 pm, last Wednesday of the month, Santa Catalina School, Monterey. Contact Richard Ware, P.O. Box 222988, Carmel, CA 93922.

Macs Of Marin. Macintosh users of Marin County. Both beginning and experienced users are welcome. Meetings: Room 104, Austin Science Building, College of Marin, 2nd Thursday of each month, 7:00 pm. Contact Steve Salzman, (415) 459-5707.

maCruzers, a Macintosh user's group, meets every second Wednesday of the month at Louden Nelson Recreation Center in Santa Cruz, 7 pm. For information call (408) 459-1644, or leave mail on The WELL (415-332-6106) for Paul Foraker [sforaker]. Wood Ring BBS (408) 423-7205, 18 hrs/day, several megs of shareware/pd utilities and games; making the effort to have the latest version of important DAs and utilities.

Association of Apple 32 Users. Meetings at GTE in Mountain View, 2nd Saturday of the month. Contact Ken Silverman, P.O. Box 634, Santa Clara, CA 95052, (408) 263-0398.

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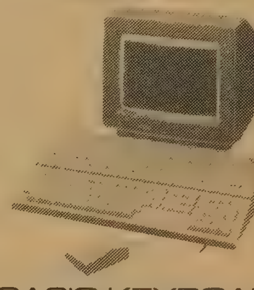

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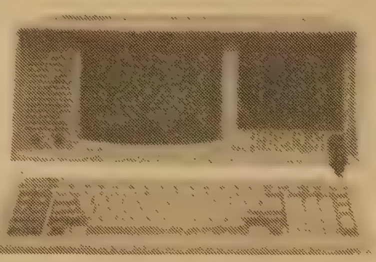

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BAMMSBUA: (San Francisco) Bay Area Mac M.S. Basic Users Anonymous. A high-level users group devoted to the Microsoft dialect of BASIC for the Macintosh. Meets the second Tuesday of each month. For more information contact Ted Jones (415) 826-9239.

Mac Health User Group. For DentalMac, Medimac and Chiromac users, and interested others. To discuss ways to better use these billing and accounts receivable programs and the Macintosh in health-care practice. Meets at various times and locations. For more info, contact Robin Guess, 896 24th Avenue, San Francisco, CA 94121, (415) 387-3042.

Hellmans Open House. Meets every Tuesday 7 pm at 814 "E" St. San Rafael. Macintosh Network Games, Mazeware and Net-Trek, Bring your Mac and Appletalk cables if you have them. For more info call (415) 453-7924.

Christian Macintosh Users Group, Silicon Valley Chapter. Meets first Thursday of each month in Santa Clara. Newsletter and support hotline available All user levels welcome. Call Rick Thrasher at (408) 437-1913.

MICROMATE

East Bay Micro-Mate Users' Group. CP/M (3.0) public domain software available. Meetings at 757 Longridge Rd., Oakland, 1st Thursday of each month. Contact Ed Miler, P.O.B. 402, Moraga, CA, 94556, or call (415) 376-1611 for info.

MICROPRO

Wordstar Users. Forming user group for Wordstar users. Please write to P.O. Box 1331, Menlo Park, CA 94025 or call (415) 325-4277.

MIDI

MIDI Applications Group. Meets first Saturdays of the month. Contact John Komlenic, 1411 10th Ave., Oakland, CA 94606, (415) 465-6216.

MORROW

BAMDUA (Bay Area Micro Decision Users Association). Meets on last Tuesday of the month, 7:30 pm. Call (415) 644-2805 for location. Monthly newsletter.

SMUG (Stanford Morrow Users Group). Meets 2nd Wednesday of each month at 7 pm on Stanford Campus, Shultz Auditorium, Health Research and Policy building, Campus and Lomita Drive. Other CP/M users welcome. For further information call Ross E. Voyles, (408) 243-1455.

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PETMUG — Petaluma Morrow Users Group. Meets Westamerica Bank, Washington Square, Petaluma, 7:30 pm, 4th Thursday of the month. Contact Frank Nance, president, 293 Circulo Puebla, Rohnert Park, CA, (707) 585-2980.

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NEC

Bay Area NEC/100 Users. For NEC 8201A and TRS-80 Model 100. 1st and 3rd Thursdays, 7:30 pm. Contact Rachel Holmen, c/o Truly Portable, Box 2916, Oakland, CA 94609, (415) 658-1889. Call for location.

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INSUA Largest North Star users group in the world. Members' newsletter and software library. Membership dues $20. Contact George Riddle, P.O. Box 2910, Fairfield, CA 94533.

NOVELL

Novell User Group of Silicon Valley. A Novell user group forming. All those interested contact Robert J. Harrigan Jr. at 38 Corning Ave., Milpitas, CA 35035. (408) 263-0987.

OSBORNE

East Bay FOG (First Osborne Group) Osborne, Kaypro and Morrow. Meets second Wednesday of the month at B&B Electric, 2832 Ford Street, Oakland. 6 pm workshops, 7:30 pm program. For info contact 5497 Taft Ave., Oakland, CA 94518; phone (415) 272-9099.

SMOG3 Osborne User Group (Peninsula) Meets first and second Monday of every month at Crane Place, 1331 Crane, Menlo Park. Call Phil Moore at (415) 325-2442.

MTDOG (Mt. Diablo Chapter-First Osborne Group) Meetings 7 pm, 3rd Wednesday each month in Diablo Room (top floor), SF Federal Savings and Loan, 1660 Olympic Blvd. (cross-street: California), Walnut Creek. Software library, software / hardware / service demonstrations, sharing problems and solutions. For meeting info contact Larry Sydes, (415) 933-2665.

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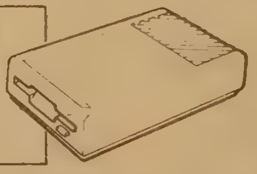

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North Bay First Osborne Group. Meets first Thursday of the month at 7:30 pm, Valley Oaks Apts. Rec. Hall, 2600 Northcoast St., Santa Rosa, CA (off West Steele Lane). Call (707) 546-0145 for more information.

Microcomputer Users Of Santa Cruz (MUSC). A FOG affiliate, membership open to all persons interested in MS-DOS or CP/M computers. Meetings the second Tuesday of each month. Wheelchair access. Guest speakers, demonstrations, MS-DOS and CP/M software libraries. Info: Barney Bricmont. 1920 Maciel Avenue, Santa Cruz, CA 94062. (408) 476-0504.

San Francisco Computer Society, a CP/M and MS-DOS user group, meets on the first Monday of each month, 7:00 pm, at Homestead Savings, 5757 Geary Blvd., San Francisco. Membership is free, meetings are free and open to members and non-members. Member of FOG. For more information call Ralph Gallagher at (415) 929-0252.

Silicon Valley FOG. Supporting all types of CP/M micros. Two meetings monthly, one at the Campbell Public Library, 70 North Central Ave., Campbell, and the other at the Saratoga Community Library, 13650 Saratoga Ave., on the southeast corner of Saratoga and Fruitvale Avenues, Saratoga. Call (408) 371-8699 for further information.

PAPERBACK SOFTWARE

V-P Planner Special Interest Group. Meets 2830 Ninth St., Berkeley, CA, every third Thursday, 7:30 pm. Contact Lloyd W. Bracewell, 6200 Harwood Ave., Oakland, CA 94618, (415) 547-8205.

PEACHTREE

Peachtree User Group. Peachtree users group forming. All those interested write for info. P.O. Box 20607, Oakland, CA 94620. Or call (415) 465-3570.

PICK

Northern California Pick Users. NCPU mails a monthly newsletter, meets on the third Tuesday of the month for a dinner meeting with Pick related program, holds Pick educational courses, and has many other member benefits. P.O. Box 884474, San Francisco, CA 94188-4474, (415) 284-4063.

PIED PIPER

Pied Piper Users Group Owners of Pied Piper CP/M based computer are invited to call or attend the PPUG. Meets last Tuesday of the month at 7:30 pm. Please call (415) 638-1146. Meeting address: 10950 Elvessa St., Oakland 94605.

PROLOG

Prolog. A SIG-Prolog is being formed. Interested? Call Jorge (415) 969-5045 or Dave (415) 368-8450 (evenings).

TPRO Users. A group formed for users of Turbo Prolog. Contact Kim Floyd, 3109 Scotts Valley Dr., Suite 138, Scotts Valley, CA 95066. (408) 867-3438 x27. BBS: (408) 438-6506.

R2E

North Bay R2E Forming user group for R2E System microcomputer users. Please call (415) 235-1598 for information.

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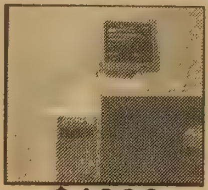

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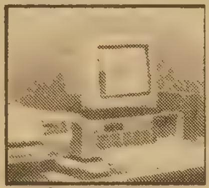

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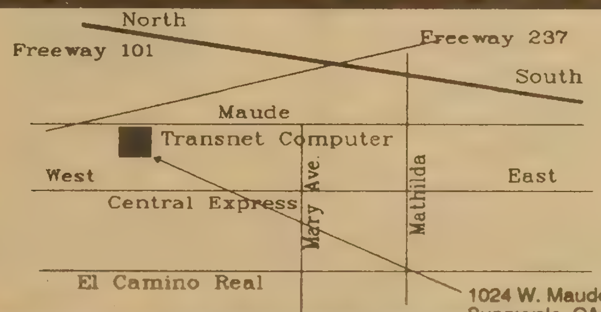

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this group is the sharing of information, problem solving, support group, purchasing discounts, support for professional, business and educational users of Radio Shack computers. Out-of-area members welcome. Meetings second Tuesdays of the month, Willow Creek Center, 1026 Mohr Lane, Concord, 7:30-9:30 pm. Doors open at 7. Contact Roy or Sue Copeland, P.O. Box 23438, Pleasant Hill, CA 94523, (415) 372-7003.

TRS Nybblers. All Tandy computers including MS-DOS (IBM Compatibles). SIG's include laptops, CoCo's, Mod 1,3,4, Mod 2, 12, 16, 6000 and MS-DOS, Access to a variety of Public Domain software. Education modules, "problem solving" peripheral committee. Meets at Chabot College (Rooms 600 & 1564) 2nd Friday, 8 pm. Write TRS-Nybblers, Chabot College, 25555 Hesperian Blvd., Hayward, CA 94545. Attn Mel Edwards. Call B.B. Jarvis (415) 846-3575.

Bay Area Chapter of the California Computer Federation, a user group for Color Computer users formed by The Redwood Color Board. Write the R.C.B., P.O. Box 7007, Redwood City, CA 94063 for details.

South Bay TRS 80 Users Group (SBUG). Meets on the second Tuesday of the month, 7:15 pm, Saratoga Library. Contact Chris Oman, P.O. Box 60116, Sunnyvale, CA 94088. (408) 985-9460. BBS: (408) 249-8259.

San Mateo TRS-80 Users Group. Meets 4th Thursday of the month at Cal Fed S&L, 2600 Ocean Ave., SF., 7:30 pm. BBS (415) 574-7684, 300/1200, 8-N-1 settings. Contact Julian Kaufman, (415) 992-1783.

Bay Area NEC/100 Users. For NEC 8201A and TRS-80 Model 100. Meets 1st and 3rd Thursdays, 7:30 pm. Contact Rachel Holmen, c/o Truly Portable, Box 2916, Oakland, CA 94609, (415) 658-1889. Call for location.

Byte Bandits of America. Meets 2nd Saturdays 1 pm, 4th Wednesday 7 pm, 780 Manx Ave., Campbell, CA. Call Robert W. Brown, (408) 379-2774 for information. BBS: 300/1200. 24 hrs., free, (408) 374-3974.

Club 100. A Model 100 users Group. Dedicated to Model 100, 103, 200, NEC 8201A and Olivetti M10 users. Contact Richard Hanson, club secretary, P.O. Box 23438, Pleasant Hill, CA 94523, or call our club BBS at (415) 939-1246. We are a very active, on-line club with many helpful members, and a large Model 100 public domain library available to members.

United Computer Federation: San Francisco Chapter. Meets the fourth Tuesday of each month at the Foster City Fashion Island Mall community room. Meeting starts at 7:30 pm. Meetings are open to the public and all are welcome. The UCF is a network of Tandy color Computer user groups. For more information phone Brad Ryan, Chapter Vice President, at (415) 469-3172.

Sacramento COCO Club. Meets 3rd Saturday of the month, 7:00 pm, at the Four Seasons Restaurant. 65th and Folsom Blvd. Contact Bill Drennon at (916) 486-1594 or write P.O. Box 214733, Sacto, CA 95821-0733.

REALWORLD

Bay Area REALWORLD Users Group meets the third Tuesday of each month. For more information contact Mitch Paioff, 5097 Tisdale Way, San Jose, CA 95130, (408) 866-4310.

ROYAL

Royal Alphatronic, San Francisco. New group forming. Call Tom Rutkowski at (415) 863-4794 for information or write P.O. Box 421161, San Francisco, CA 94142.

S-100

S-100 Bus Users Group. Meets fourth Tuesdays, 7:30 pm, Community Room, El Paseo de Saratoga, San Jose. Contact Dick Delp, Box 10404, San Jose, CA 95157, (408) 245-2137. CP/M-80, S-100 emphasis. CP/M and MS-DOS libraries.

SANYO

Sanyo MBC 1100-1150 user group now forming in Oakland. Call or write (415) 534-1981, 5885 Bancroft Ave., Oakland 94605 for meeting time and location.

Sanyo National Users Group. SNUG is a central resource for Sanyo information and public domain. Inquiries welcome! Contact John Egan, 101 Irving Ct., Pleasant Hill, (415) 827-3023.

Sanyo PC Compatible Club. SPCCC supports Sanyo 16 bit machines and similar PC clones. We publish the Sanyo PC Hackers Newsletter (International), subscription rate $20/yr., and maintain a public domain software library. Meeting at the Mercury Room of Mercury Savings & Loan, 99 El Camino Real, Menlo Park, CA, 7-9 pm the first Wednesday of the month. Contact Victor R. Frank, 12450 Skyline Blvd., Woodside, CA 94602, (415) 851-7031.

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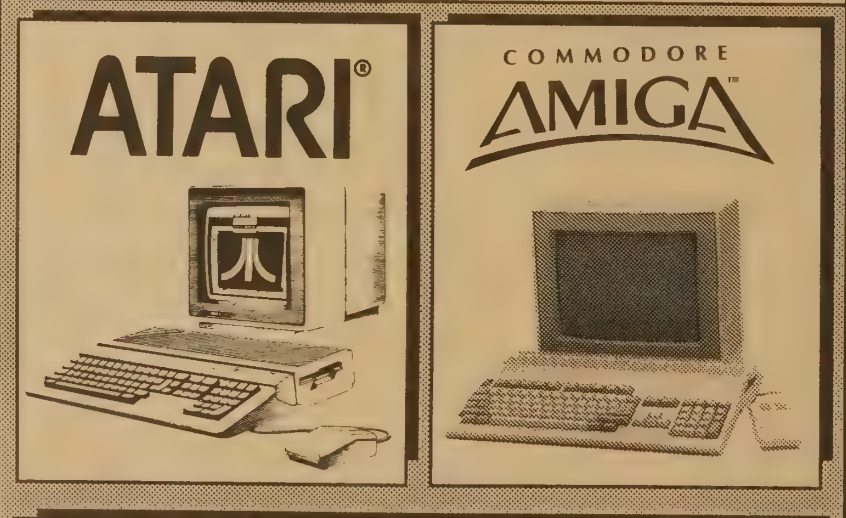

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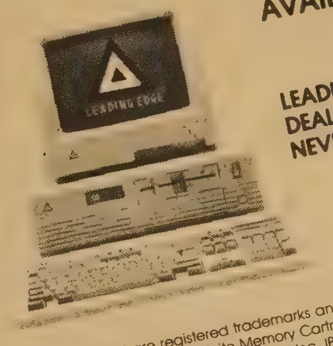

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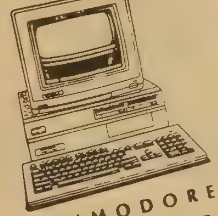

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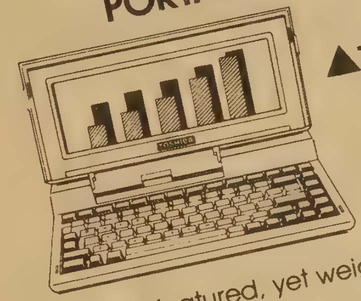

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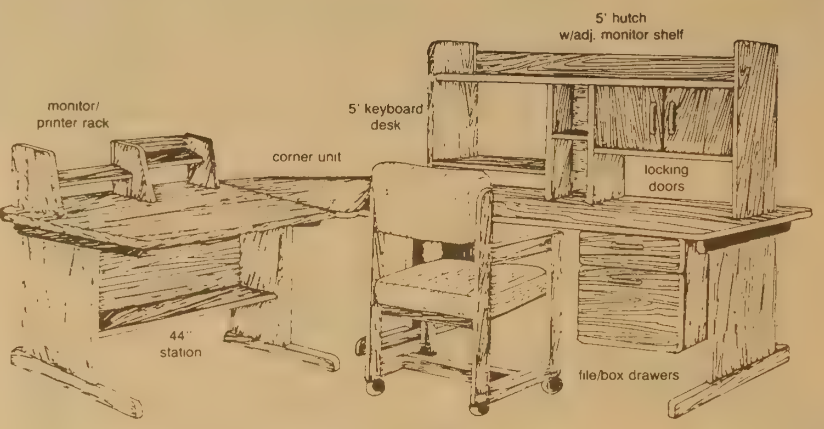

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Nor-Cal TI 99/4A Users Group. Learn more about your Texas Instruments 99/4A computer. Free software, sources of hardware and software. Contact Dave Steady, 324 Howard St., Petaluma 94952, (707) 762-6561. Meetings at Retail Clerks' Union Hall, 382 Tesconi Ct., Santa Rosa, CA, first Wednesday of the month at 7 pm.

Santa Clara Valley TI Pro User Group. Meetings 7 pm, 4th Thursdays, location varies. Contact Tom Schoen, PO Box 871, Newark, CA 94560, (415) 793-6670.

THEOS/OASIS

Theos/Oasis Users Bay Area Group. Greater SF Bay Area users of THEOS and OASIS multi-user operating systems meet quarterly to focus on "hot" issues and share info. Contact Joe Trimble, 236 Frisbie St., Oakland, CA 94611, (415) 839-3281.

TIMEX/SINCLAIR

East Bay Timex/Sinclair User Group (EBZUG) Timex/Sinclair user group. S/W library and newsletter. Usually meets 4th Thursday of the month at 7:30 pm, CALL FIRST FOR EXACT TIME AND PLACE. Contact Russ English, 415/465-3116 or write to Woody McPheeters at 3128 King St., Berkeley, CA 94703.

Timex/Sinclair Users of Silicon Valley (GUTS/SV) c/o Bill Miller, 6675 Clifford Drive, Cupertino, CA 95014-4530. 253-3175. SW library and newsletter. Meets every Saturday morning at 9:00 am at Stanford University, Jordan Hall (in the quadrangle), Math Building (number 380) in room 380C (downstairs). For topic check the PDSE (Public Domain Software Exchange) BBS in Sunnyvale at (408) 735-7390, 300/1200, 8-N-1, 24-hours, 32 lines (no waiting!).

Silicon Valley Timex/Sinclair User Group (SVTSUG) Timex/Sinclair user group: 6675 Clifford Drive, Cupertino, CA 95014-4530. Bill Miller (408) 253-3175. SW library and newsletter. Meets at Cupertino Library, 10400 Torre Ave., Cupertino, CA, last Tuesday of the month.

UNIX

The Unix C-Club Seminars, public domain softwares, information exchange, Unix hardwares and softwares. Discount on purchases. Meets 2nd Saturday of each month at 10 am. Call Gilbert B. Dalit at (415) 348-6723 or (408) 238-5587 for more information, or write: 122 2nd Ave., Suite 214, San Mateo, CA 94401.

Silicon Valley Net. Meets every fourth Tuesday of the month, 7:30 pm, at 3000 Hanover, Palo Alto. SVNet presents speakers on topics of interest to UNIX users. Informal, technical setting where questions are welcome. Free of charge.

VECTOR

Bay Area Vector Group Meeting held regularly. Please call to be put on mailing list. You will be informed of next meeting! Contact Peter Tjeerdsma, 764 Cole St. #4, San Francisco, CA 94117. Phone (415) 681-0308.

VICTOR

Victor User Group. San Francisco Bay Area Victor User's Group. Dues are $30 a year, which includes a subscription to VictorTalk, membership in a Victor-exclusive discount buying cooperative, and the right to buy from our public domain library at a discount. San Francisco meetings are held the third Sunday of the month at 5 pm at Homestead Savings, 130 West Portal, San Francisco. Contact John Kimber at (415) 797-6423 or Bordman Moore at (415) 283-3285. Modem (415) 574-7914.

VTC-1050

VTC-1050 User's Group. Establishing a VTC-1050 User's group and newsletter. Interested parties please call or write Ken Phillips, 4349 Blackford Ave. #1, San Jose, CA 95129, (408) 973-1353.

WORD PERFECT

Word Perfect of Santa Cruz. Now a SIG of Santa Cruz Computer Society. Telephone network, meetings occasionally as needed. 2120-87 N. Pacific, Santa Cruz, CA 95960-2743. Contact Sylvia Caras, (408) 426-7636.

Word Perfect SF PC UG. Meets on the first Monday of each month at 6:30 before general meeting at Fort Mason, Bldg. A, Rm. 5. Contact D. Wayne Smith at (415) 221-9166.

South Bay Word Perfect User Group. Call Martin Van Derpool, (408)238-8434 for information.

ZENITH

Zenith User Group of San Francisco. Zenith users are forming a user group and bulletin board for Zenith computers. Hands on demonstrations will be provided on the full line of Zenith hardware. Meetings at 1325 Howard St., SF, CA. Contact Stan Kelley, 415-861-3068.

B.A.H.U.G. Bay Area Heath Users. Heath/Zenith computers, ZDOS, PC-DOS, CP/M and MS-DOS. Meetings at 2001 Middlefield Rd., Redwood City, CA, 7 pm second Tuesday of each month.

NBHZUG North Bay Heath/Zenith Users Group. Devoted to Heath/Zenith computers in specific and MS-DOS, CP/M computers in general. Beginners and advanced. Meeting place varies, time 2nd Saturday, noon. Contact Martin Schaaf, (415) 454-6761 for information.

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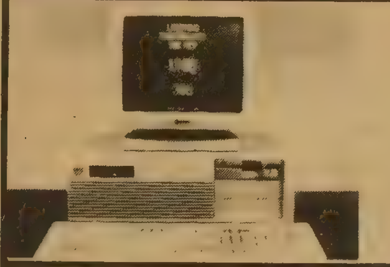

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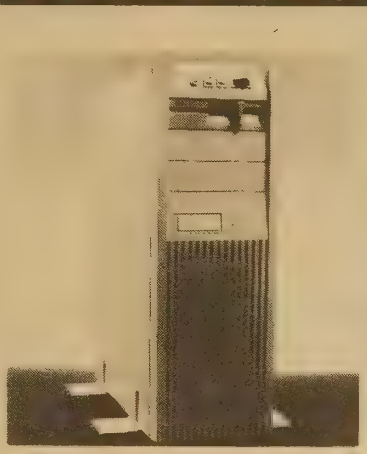

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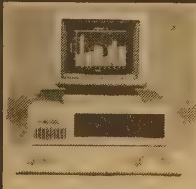

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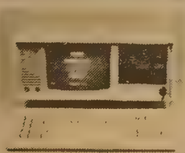

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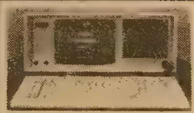

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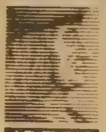

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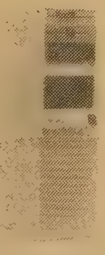

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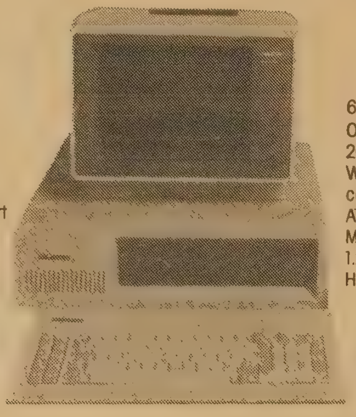

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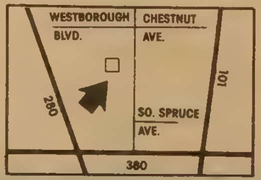

ADVERTISER'S INDEX

3F Associates ... 33
Access Computer ... 75
Advance Computer ... 4,5
Alpha Fine Furniture ... 146
Americal Group ... 139
American Computer Systems ... 3
American Digital Discount ... 95
American Ink Products ... 25
AMS ... 65
Aroma Computer ... 32
Association For Systems Management ... 138
ATC ... 8
Belmont Computer Products ... 18
Berkeley Telegraph ... 8
Borland International ... 156
Cimpex ... 134
Computer Attic ... 7,107
Computer Furniture ... 124
Computer Graphics Center Inc ... 34
Computer Insights ... 153
Computer Spectrum ... 144
Computer Spot Inc ... 24
Computer Store ... 101
Computer Surplus Store ... 136,137
Computer Swap Inc ... 138
Computer Valley ... 85
Computerland Colma ... 113
Computertime ... 126,128
Computown ... 19
Compuworld ... 67
Cooperative Type ... 34
Crescent Com Computers ... 151
CSI ... 102
Cypress Dist ... 120,130,132
D-Data Inc. ... 41
Data One ... 71
Diamond Software ... 27-29
Direct S.R. ... 110
Discount Micro World ... 36,37
ECX Computers ... 140
EFI's Discount Computers ... 144
Empac ... 121
Ergonomic Computer Products ... 34
Friendly Software Store ... 63
Fry's ... 2,77-83
Gates Distributing ... 35
Generic Computer Systems ... 146
Golden Gate Shows ... 76,136
Guenther ... 16
Guitar Showcase ... 109
Halted Specialties ... 125
Hellman's ... 88
Herb's Discount Software ... 140
Hex Computers ... 32
HT Electronics ... 138
ICB ... 142
ICON ... 17
Image Factory ... 122
IMC ... 59
Information Engineering ... 105
Intelligent Products Marketing (IPM Show) ... 72
International Micronet ... 45
International Software Library ... 14
IPM/Blue Chips ... 11
IPM/Migent ... 15
Jemini Electronics ... 141
Jointek ... 131
Julian Systems ... 129
Kenfil ... 155
Kyocera Unison, Inc (Laser Printer Div) ... 55
M.A.C. (Modern Accessories for Computers) ... 73
MAC Garden ... 98
Managing Technology ... 22
Manex Co. ... 146
Micro Computer Support Inc ... 18
Micro Strategies ... 97
Micro-Tech International ... 61
Microcom Systems ... 24
Microshows ... 126,142,146
Microtrend Corporation ... 72
Microware Exceltek ... 99
Microworld ... 56
Mini Micro Supply ... 43
Mini Micro Supply/Brother International ... 53
Mitsuba Corp ... 127
Monarch Computers ... 52
National Computer Consulting ... 24
Nordic Computers ... 119
OEMI ... 9
Payless PC ... 147
PC Plus Consulting ... 39
PC Pro ... 111
PC Upgraders ... 103
Performance Systems International ... 150
Peripheral Land ... 93
Precision Software Products ... 30
Printer Works ... 135
Quality Micro ... 149
Quarterdeck ... 57
Rosehill Systems ... 20,21
Santron Computers ... 91
Schwab Computer ... 34
Sci Tech Computer Stores ... 123
Shoreline Software & Computers 12
Software City ... 49
Software For Less ... 142
Songtech International ... 140
Storage System Engineering ... 26
Subscription Coupon ... 150
Summit Micro Design ... 31
Suntech ... 31
Supersoft ... 13
Tanstaafl ... 25
Task Technology ... 115
Technoland ... 89
Tek Computer ... 51
The Software Engineering Store ... 88
Tokyo Electroland ... 87
Toptek Micro Center ... 117
Transnet ... 143
Typesetting Shop ... 144
Universal Computer Products ... 152
Valor Software ... 17
VIP Computer ... 133
West Coast Computer Faire ... 128
Winners Circle ... 145
Yes ... 69

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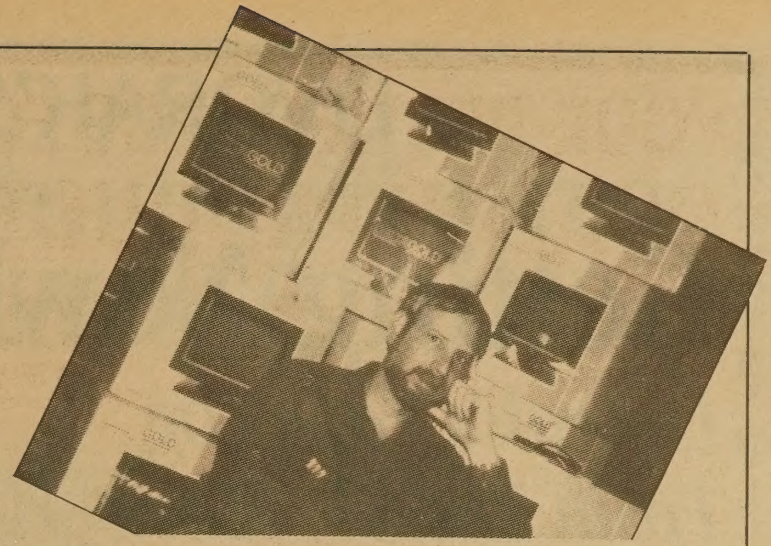

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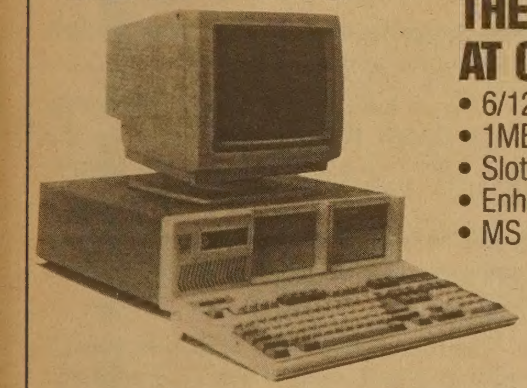

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DVORAK'S LAST COLUMN

Getting Nowhere Fast:

Dvorak's Tape Log From The S.F. Macworld Exposition

By John C. Dvorak

Many people wonder what a technology writer has to do to produce a column. What seems to be the most interesting aspect of the job is actually the dullest: attending shows and exhibits. The following are actual notes taken from the Pearlcorder L200 microcassette recorder used by me in my tour of the Macworld Exposition in San Francisco. The numbers refer to the index number. This information is not to be used for the purpose of gambling.

000 — "Going across the bridge the temperature is 6 degrees centigrade." Some metric nutball put up a billboard telling me so as I drove up the ramp to the bridge. I didn't have a calculator to tell me what the real temperature was, but I knew it was cold. It was raining too. Welcome to San Francisco.

017 — "Considering the NFL Championship games were on TV, it's amazing how packed the parking lots are. San Francisco can't handle a popular show."

027 — "Some huge fat guys are leaving the show. Too bad the Vikings didn't have them today on their team."

032 — "All the headlines in the San Francisco papers are about Jimmy the Greek and his comments about black athletes. This town doesn't know what's interesting."

> **My recommendation: If you want to learn something about what's happening, go to the local Macintosh Users Group meetings. Skip these events.**

039 — "There's a girl with a ring in her nose!"

041 — Entering the show floor. "I see a bunch of clowns wearing a dumb little top hat that says I want to be on TOPS. I can see there's already a high dork level here. This is a good sign."

091 — Wandered to TOPS exhibit to witness one of those dumb "stage" presentations. It was pathetic. Then I wandered over to see Chris Crawford and grab a copy of his newsletter. Roamed aimlessly.

143 — Saw part of a tape of the dull TV show, the Personal Computer Show. It featured PC Magazine West Coast Editor Jared Taylor telling us how Interleaf Publisher was "meaningful integrated software." Like meaningful, man.

154 — "Goldmine Publishing here. There's the owner giving out pinup posters of herself. Kind of an interesting way to get a date."

191 — Saw Robert "Bob" Wiggins seated on a couch at his Macintosh Business Letter booth.

212 — "For $695 you can buy a Lisa from Sun Remarketing. An Apple II for $395! These guys have some sort of advanced type thinking."

230 — "There's WingZ with a bunch of callipygious gals wearing jumpsuits hanging around. You have to wait in line for an eternity to see a demo. Forget it." Began to notice that I wasn't getting much substantive information from the show. Pretty dull these notes.

235 — "There's another girl with a ring in her nose! What gives?"

240 — "Microsoft booth empty except for the crowd around a Microsoft Works Demo."

252 — "At MacUser booth. No bags left." Louise Kohl makes snide remark about her being left holding the bag.

293 — "Huge crowd at the Letraset booth. Gawkers. I can't figure out what's wrong with these people that they are attracted to these boring demos."

328 — "Going past expensive Lotus booth. Nobody here. Modern Jazz!? Yeah, they're going to flock to that."

340 — "Adobe has a huge crowd. They're showing something on a huge Mitsubishi screen. The whole screen is purple. Totally out of convergence."

369 — "Just bumped by a jerk with a TOPS hat on. A large defensive end type. Should have been at the Minnesota game."

419 — "Here's some weird wooden boxes that you can put a Mac in to hide them if you're totally humiliated by owning a Mac."

428 — "Here's one: 'Practical artificial Intelligence' from Human Intellect Systems. Yeah, right."

444 — "Here's another good one. Fortran on the Mac. Hahaha."

452 — Bumped into MacUser Science Officer Steve Bobker. He was wearing a suit and hard to recognize. After exchanging some slanderous comments about various companies, he dragged me around to show me the hot stuff.

503 — Bobker showed me the Smethers-Barnes prototyping software so people can design vaporware.

537 — Saw a DOS emulator. Sign said "DOS No Longer Greek to Mac." Unfortunately the guy in the booth spoke only Greek. Some passerby had to explain to me how it worked.

> **I go over the tape log to see what I learned from another day at another show. I discover that I learned nothing. For this I get paid? Worse. For this, show promoters make millions.**

545 — After an hour I'm back on the other side again and there's Wiggins still sitting on the couch. I have to associate with these people. Sheesh.

548 — Bobker tells me to go to the private Super-Mac demos in the back halls of Moscone. I head that way.

555 — "Gee there's food here, cokes, pies. Great." This idea is a real coup. There's no security, either. Anyone could have come back here and had a great meal and an easygoing demo of a slug of new products. Noteworthy is a new telecom package called *Acknowledge* and the latest *Pixel Paint* plus a host of other goodies. These guys have to be watched.

560 — "Summary. The San Francisco Edition of the Macworld Exposition is history. It was big and far better than the Boston hothouse version of the show back east. Most notable were the dozens of parties including a dud reception held by Apple and a weird *MacUser* dance in a screwball auditorium. There were more suits than ever before and this show made it obvious that the world of the Macintosh has wrested control from the IBMers in leading the way to the future."

570 — I head back to witness the Cleveland Browns choke in the AFC Championship. I take my bag of literature and put it in the closet. I go to the Mac, boot it up. I figure I'll review some software. Maybe write the column. Hmmmm. I see a copy of *Crystal Quest*. I rack up 1.8 million. I figure I've done enough work for one day.

I go over the tape log to see what I learned from another day at another show. I discover that I learned nothing. For this I get paid? Worse. For this, show promoters make millions.

My recommendation: If you want to learn something about what's happening, go to the local Macintosh Users Group meetings. Skip these events. ☐

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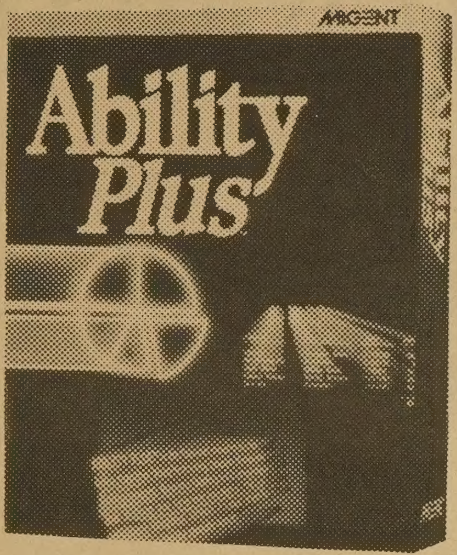

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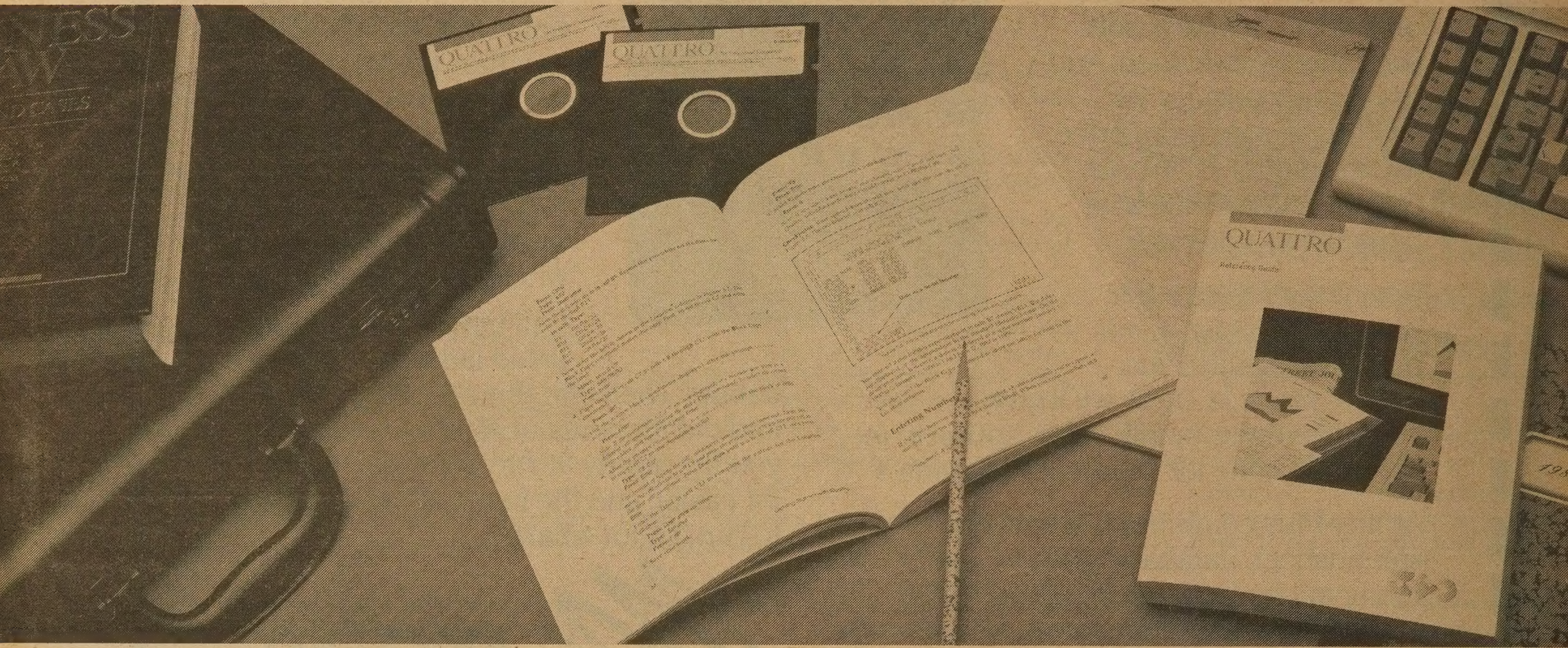
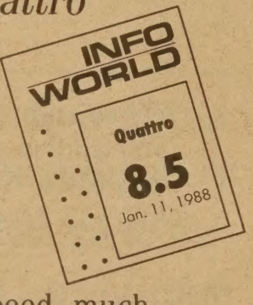
—John Walkenbach, InfoWorld



Here's what InfoWorld had to say about Quattro



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Excerpts from John Walkenbach's review of Quattro™ in InfoWorld, January 11, 1988.

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